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POSTGRADUATE MEDICAL EDUCATION*

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I CONSIDER it a great honor to have been asked to deliver the Annual Discourse at this meeting of the Massachusetts Medical Society. When I think of the calibre of the men who have preceded me as orator I am overcome with a great sense of humility. I am very grateful for this opportunity to speak before you. I present this address, on a general practitioner's view regarding certain phases of medical education, humbly and with full knowledge that whatever is said before luncheon is almost invariably forgotten by the time that repast is finished.

When or how the idea of Postgraduate Medical Education was born and first developed in this country is lost in the dim past. The movement seems not to have been started by any medical school, medical society, or as an accepted element in medical training but rather to have been initiated by physicians or groups of physicians of great knowledge and wise judgment who recognized the weaknesses of the teaching of their day and who undertook on their own responsibility without any support from the medical associations or from the state to correct these defects. Such men were pioneers of outstanding ability and we should never forget the debt of gratitude we owe them. In the Massachusetts Medical Society, particularly, must we always feel proud of our first president, for his varied accomplishments. John Warren, in 1782, realizing the lack of properly trained surgeons in the War of the Revolution, commenced in Boston the systematic teaching of Surgery and Anatomy at the Military Hospital which he commanded. This may be regarded as the first American attempt at organized postgraduate instruction.

The first undergraduate school of Medicine in the United States was established in the University of Pennsylvania in 1765. Since then Philadelphia has remained a noted medical center. It is therefore most fitting that this University also should have been a leader in graduate medical education by opening in the Fall of 1920 the first fairly comprehensive group of systematic graduate courses in medicine to be offered by any medical university in the United States.

In the year 1872, an effort was made on the part of several New York medical men who had studied abroad to develop postgraduate medical teaching in New York City. At the time it was the custom for a certain class or group, after taking hospital courses at home, to visit foreign medical centers spending six months to two years at one or more of them. Berlin, Vienna, Prague, London and Edinburgh were the chief places thus utilized for postgraduate study and of these Vienna was the most popular, for more could be seen and accomplished there in a given time than at any other medical center. Eventually, as a result of work of this nature there was incorporated the Alumni Association of the College of Physicians and Surgeons in 1873, and it was hoped that out of this Association there might be developed a center of postgraduate teaching, but not until 1877 was such teaching finally started. Out of this grew the New York Polyclinic in 1882, and at the same time the New York Post Graduate Medical School was started. Gradually other hospitals and committees in New York City took up the work of postgraduate education and in 1924 amalgamated into the New York Academy of Medicine.

In Chicago in the year 1892 a small group of physicians, druggists and chemists met two evenings a week to study bacteriology, histology, microscopy, clinical diagnosis and urinalysis. At that time inquiry at the Post Graduate Medical School and Polyclinic disclosed the fact that only about a dozen physicians out of a total of two thousand in the city had taken courses in these institutions during the past year. Beginning in 1921 practically all the southern medical schools broadened their policies from year to year to meet the growing demands of postgraduate medical instruction.

This country is not alone in its endeavor to increase postgraduate medical education. In England the Fellowship of Medicine and Post Graduate Medical Association of London provides instruction to qualified physicians in the

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hospitals of that city. It is affiliated with fifty hospitals containing 6,000 beds and instruction is provided in every field of medicine. Twenty-seven of the hospitals in London offer about sixty special courses each year. In the general hospitals these consist of two weeks of intensive work in general medicine, surgery, or a single division of clinical medicine. In the special hospitals the courses are limited to the particular field of the hospital. None of these courses give a degree or certificate. The Association also collates and publishes the many lectures and demonstrations scheduled in the city in all institutions and keeps in touch with the programs of postgraduate training in the other teaching centers in the British Isles.

The courses mentioned above are convenient for physicians in the cities, but not for those in the smaller cities and in the country who cannot afford the time and money to attend. Very little effort has yet been made to provide continuation education for these physicians which would allow them to attend their practices. Nothing like an extension plan of education has been developed.

In France most of the regular clinics, lectures and demonstrations in the French hospitals are open to qualified practitioners, and a large number of doctors attend the lectures in some of the well-known clinics. There is no organized effort however to keep the main body of the profession informed on current methods of diagnosis and treatment.

In Germany there is an unofficial plan of continuation training which has been worked out by the medical profession. The present plan originated in Prussia in 1901 with the organization of a central committee for medical postgraduate work for the state. Similar committees were formed in the other German states and in 1908 a central committee was organized. To reach the largest number of doctors the teaching was made as widespread as possible. In places where there were large hospitals the matter was comparatively easy; in the smaller places and in the country, the system of traveling teachers was adopted. The hours of teaching were arranged to suit the doctors so as not to interfere with their work. From noon until 2 o'clock, in the evening after 7, and Sunday mornings are the favorite times. The courses are free in order to attract the largest number of doctors though there are many who think that what must be paid for will be valued more than that which is given free. This means lack of compensation for the teachers, but there is a widespread spirit of self-sacrificing coöperation to make the matter of postgraduate education possible.

Local committees are formed of representatives of the state, of the municipal boards, of the universities, of the hospitals, and of the medical profession and medical societies. These committees receive funds through the government in question who realize that it is in the interests of health of the entire population to have a well-educated medical force.

In the university towns the medical facilities take over these tasks while in other towns the large hospitals are usually the center points. In the smaller towns traveling lecturers are sent out from the centers of learning, singly or in groups, who give lectures to the smaller medical societies. The radio is also used in a half hour talk every Friday evening, given by the most prominent authorities. A periodical for medical advancement is published which in contrast to the scientific periodicals is devoted to the higher education of practising doctors. It concerns itself only with such matters as have received scientific recognition and can be of use in general practice.

The *American Medical Journal* in 1899 estimated that there were 120,000 doctors in the United States of whom there were 50,000 who had never subscribed for a medical journal and who had never received one in their office except some free copy of an advertising sheet. There were about the same number who had no books which did not antedate their graduation. To such a challenge, though far too many doctors after graduation lay down their books and cease to study, the medical teachers have made a most splendid response.

There are many factors which are working for the benefit of our postgraduate medical education. The medical societies, the hospitals, the libraries, the journals and the medical extension courses are the chief of these.

I have already mentioned the development of educational opportunities in the New York Academy of Medicine. I wonder if we members of the Massachusetts Medical Society generally realize what a great amount of work is being done there. Massachusetts well might follow certain of the precedents established in New York.

The library of the New York Academy of Medicine contains 140,000 books, medical and surgical meetings are held there each month, a series of lectures is given in November and an annual graduate fortnight offers opportunities to hear lectures and to attend clinics in October. All of the lectures and meetings held at the Academy are open to the profession generally and to medical students. The hospitals of the city contain over 34,000 beds. Over 50,000 patients are cared for each year. Ninety-four hospitals have an aggregate of about 25,000 beds which offer opportunities for postgraduate medical study. The committee of the Academy which has this matter under its supervision, has prepared a booklet which contains a description of the special facilities for postgraduate study which each of the listed hospitals offers and the names of attending medical men and their days

and hours of attendance. There is a bureau in the Academy which furnishes detailed information in regard to postgraduate medical study in Greater New York, and in other cities of the United States, Canada and Europe. Each evening a daily bulletin is posted in which the operations of sixty-five hospitals to be performed the following day are listed. There is also established a bulletin of non-operative clinics and conferences in sixty-one approved hospitals of the city. A total of 176 clinics are thus listed.

I have spoken of the work in Chicago. The study in that city discloses the fact that it was not practicable for a majority of physicians, or even a considerable number, to pursue successfully any studies at the schools and at the same time to carry on their practice; one or the other must be sacrificed. There were, however, many who could devote two or three evenings each week to such study if it were brought within their easy reach. In this city there was developed an extension plan. The choice of subjects can be made by the class, the courses may be made long or short, and the work can be done practically without loss of time and at minimum cost. Evidently there are many methods by which to conduct satisfactory extension teaching.

I have mentioned that the essential vehicles for successful postgraduate teaching are the medical societies, hospitals, libraries, magazines and extension courses; in Massachusetts the most important of these is our State Society for since its very beginning it has been the chief instrument for general spreading of medical knowledge.

There are 7,014 doctors in this state and of these only 5,054 belong to the state medical society. I believe the membership should be increased to include all the licensed practitioners of the Commonwealth. May I call to your mind something said by Dr. Osler in the International Clinics of 1910: "But after all, the killing vice of the young doctor is intellectual laziness. He may have worked hard at college, but the years of probation have been his ruin. Without specific subjects upon which to work, he gets the newspaper or novel habit, and fritters his energies upon useless literature. Habits of systematic reading are rare, and five or ten years from his license, as practice begins to grow, may find the young doctor knowing less than he did when he started and without fixed educational purposes in life. The man who knows it all and gets nothing from the Society reminds one of that little dried-up miniature of humanity, the prematurely senile infant, whose tabetic marasmus has added old age to infancy. Why should he go to the Society and hear Dr. Jones on the gastritic relations of neurasthenia when he can get it all so much better in the works of Einhorn or Ewald? He is wearying of seeing appendices, and there are no more pelvic viscera for demonstration. It is a waste of time, he says, and he feels better at home, and perhaps that is the best place for a man who has reached this stage of intellectual stagnation."

This quotation serves to emphasize my conviction that in order for the state society best to fulfill its purpose it must embrace the whole profession.

The present weakness in membership of the Massachusetts Medical Society lends force to the suggestion that the educational work of the society should not be limited solely to its members, for those who are not on the roster need this supplemental education as much if not more than those who belong to the society. That there may be further limitation of the membership in the future is suggested by your constitution which states that graduates from any unrecognized medical college, who wish to become fellows of the society, must be better known than heretofore and must clearly demonstrate their capabilities not only to the examining censors but also to the committee on medical education and medical diplomas before they can be elected. Personally I doubt the wisdom of this action.

You have voted an annual prize of $50 for the best written and most comprehensive case report submitted by interns holding any of the rotating internships now offered in Massachusetts, and approved by the American Medical Association. Such a prize should do much to stimulate medical writing among younger men and will help to disseminate throughout the state the importance of keeping abreast of medical literature. I am heartily in favor of this development.

Hospitals are almost universally equipped to do postgraduate medical educational work with their clinics of all kinds, their various lectures and medical meetings. The medical profession owes them a great debt of gratitude for this as well as for the constant courtesy and hospitality of their staffs and their willingness to take the time and strength to show visiting doctors whatever they may have of interest for they make one feel that for this work came they into the world. To realize the amount of postgraduate medical teaching that can be done in large institutions I need only to call to your mind the work of the Mayo Clinic in Rochester as one of the best known examples. Nearer at hand the Albany City Hospital is doing an intensive work in teaching postgraduate medicine and in its coöperation with the doctors of the surrounding country. You may know that the hospital is directly associated with the Albany Medical College and in this way differs from many of the ordinary hospitals. Every weekday clinics are given at noon; there is this unusual custom added, that doctors not on the

staff are urged to bring in their troublesome and trying cases. Family doctors read histories and exhibit their patients and then the staff discusses the matter of diagnosis and treatment. This makes for a much closer feeling between the country doctors and the hospital and is very educational as it frequently brings up the common but difficult questions which general practitioners are called upon to meet. There is also a fund which meets the expenses of visiting doctors of renown who lecture on their special subjects. The names of these men are of national standing and it is a pleasure that such a goodly number have come from the Massachusetts Medical Society.

Another way of raising the standard of medical knowledge is less widely known. In the *New England Journal of Medicine*, August 23, 1934, Dr. Channing Frothingham of Boston has written of the "Precedent Book" which has been evolved at the Faulkner Hospital in Brookline. Such a book maintains high hospital standards and prevents the treatment from varying too much with the whims of the individual doctor. There should be less misunderstanding, fewer mistakes made, and better education in therapeutics if such a book were in more general use. Each hospital could modify it to suit its own needs but always it should be revised and kept up to the best known methods.

The medical journals have ever been one of the chief ways of spreading medical knowledge and it is indeed fortunate that there are so many and such splendid ones published in this country. The *New England Journal of Medicine* is especially helpful in its publication every week of the Case Records of the Massachusetts General Hospital as well as for its very splendid and interesting original articles. For these things the magazine is widely known throughout the country.

May I mention the journal club as a means of medical education? No one man can read all the journals or do more than look over a few. Many splendid articles and much knowledge are missed. With a few men meeting together each week, and choosing and reporting on articles from several journals one can draw on a great deal of current literature easily and pleasantly. It is too bad that medical clubs of this character are not organized more widely for there are but few towns that cannot bring together at least three or four doctors who enjoy reading and talking, and the contact alone, with such kindred spirits, is worth while.

Since time immemorial the libraries have been one of the chief sources for storing medical knowledge and extending medical education. They most naturally are found in the large cities, as in the case of this Commonwealth. In Massachusetts the largest and best known collection of medical books is in the Boston Medical Library and, as there are many members of our Society who are neither graduates of Boston Medical Schools nor graduates of Boston Hospitals, may I speak of the functioning of this library, even at the expense of boring many of you? To those who live away from Boston the library will send books upon request. Theoretically the borrower of books should be a member of the library but practically this rule has not been adhered to for many years. The borrower is supposed to ask the librarian of his local public library to arrange for an inter-library loan, the only charge for which is the cost of transportation of books to and fro.

There is a feeling that the $5 out-of-town membership should have a larger number of subscribers, for the wear and tear on books used in this way is considerable and is expensive to the library in the long run. Last year there were more than 1,000 such loans to some 200 borrowers.

The library will also look up subjects for a very reasonable charge, but there again is the feeling that an out-of-town membership of $5 should be paid; otherwise the library would be subject to a great many inquiries which might be of a trivial nature and not connected with any serious purpose. I hope that a committee of the library will be formed to provide brief criticism of new books issued as a bulletin from the library at stated intervals. This would be sent to out-of-town members and would doubtless take on other functions in the way of keeping the members informed on many subjects of interest to the profession. Such a service would, I think, be welcomed by all doctors as we are at the present at the mercy of optimistic book agents just as we are at the mercy of salesmen of the various drug houses.

Several of the larger cities have libraries connected with their medical societies, or some arrangement for the purchase of medical books is made with the public library; but in the small towns a medical library is a very personal possession and a doctor will collect at much expense a considerable number of books during his lifetime. I believe that a bulletin such as I have outlined could be issued by the Boston Medical Library and would be the greatest boon to such men.

In the small cities and towns which have a hospital, the hospital of course should be the nucleus of a library. The members of the staff should be willing to contribute to some yearly fund for the purpose of buying books and periodicals, and the library of many a doctor should ultimately find its way to the hospital's shelves.

There is a great deal of postgraduate work done in other states and it is interesting to know the many means that have been devised to carry such work along. It would be stupid and a matter of repetition to describe the various experi-

ments that have been conducted, as Dr. Parkins of Boston has done this so thoroughly and interestingly. Certain plans, however, to my mind contain valuable hints that might well be followed in Massachusetts.

The State of New York has found that the selection of extension teachers is most important; they must be practical, forceful and interesting speakers, and must have had reasonable experience with the diseases which they discuss. They must understand the general physicians' problems. I agree heartily. Many outstanding teachers are not successful in teaching the graduate physician. The talk must not be too long and must present the current conception of the disease under discussion rather than the lecturer's personal opinion. The average physician prefers his graduate medicine in small, divided doses which he can assimilate readily and without having to neglect his professional duties during the process of mental digestion.

Ohio has done notable work of late in postgraduate education. Dr. Clyde L. Cummer, Past President of the Ohio State Medical Association, has developed a series of outline studies on various subjects of especial interest to the general practitioners. The series of these study outlines is being published month by month in the Ohio State Medical Journal. Dr. Cummer says that the modern tendency to depend entirely on guest speakers is to be deplored; the attendance stimulated at the start by hearing or seeing well-heralded strangers gradually drops off. As a result of placing sole reliance upon outside talent, the members lose the power of expressing themselves in the presence of their colleagues, and as one observer said, they sit around with their mouths wide open like young robins waiting to be fed. To us who live in the country the medical extension courses of the Massachusetts Medical Society have been received with the greatest pleasure and interest. These courses bring with them the association of the great hospitals and laboratories, but I for one should like to have more papers read by local men and perhaps discussed by the outside talent.

In the matter of trying to better medical education in this Commonwealth through our own society, we sometimes forget that this society makes its influence felt through a very few devoted men chiefly in and around Boston. On them fall the burden and the labor. Are we willing to stand by and know this work is being done and yet not raise a hand to help? I believe that many are not only willing, but glad to have this work and this worry fall on others' shoulders. This is not fair. It is high time we roused from our slumbers and put our shoulders to the wheel.

There is a woeful lack of responsibility among doctors when it comes to medical meetings. How often do we let other plans interfere with them; a social engagement, or stormy weather will do the trick; the open fire may be pleasant, a book entertaining, or it may be we are not especially interested in the subject itself, and so we think that we'll let the rest of the men go for this evening, although of course we comfort ourselves with the idea that we are among those most interested, and one of the most loyal members.

It seems to me as though the smaller hospitals were not doing their share in regard to medical education. When one thinks of the wealth of material that goes through the various hospitals of moderate size without comment, it seems as though a great teaching opportunity were being neglected. In order to find out exactly what the situation in this respect was, I wrote to forty-four of the hospitals of this state averaging 100 beds and received replies from thirty-four. In no one of these was any definite postgraduate work being done. Practically all of them held regular staff meetings and almost all of these were open to the members of the staff only. In answer to the question as to whether there were any regular medical or surgical rounds, nearly half of them did not have such rounds and in those that did not have such rounds and in those that did, a little more than half were open only to the staff. Only three of the thirty-four held regular operating days; practically none had any lectures except those of the medical extension courses, although there were a very few in which the medical society met at the hospital once a month, to which occasionally an outside speaker came. Would it not be a possible thing for these small hospitals to increase their usefulness by opening their staff meetings to the general profession? This would not only increase the general medical education, but it would augment the discussion and make the meetings more interesting, and also make for a more friendly feeling between all doctors and the hospitals. It seems to me that no hospital can afford to be without regular medical or surgical rounds as in this way one gets varying points of view and different advice as to treatment. Could not these hospitals arrange to have regular operating days at least once a week? Of course many are built without amphitheatres for the general profession, but at the same time the number attending operations would be very few and might learn thereby a great deal.

There is a tendency for the journals to be overeager to publish original articles and scientific papers. One wonders if at times some of these are not like the description in Holy Writ, "Like the flower of the field it flourisheth, the wind passeth over it and it is gone, and the place thereof shall know it no more." I am afraid that many scientific articles are never read by general practitioners.

It would, I believe, greatly increase the in-

terest in, and the value of the *New England Journal* if more articles were written by general practitioners for men in practice. These might not be so scientifically written as many of the articles that we now see but they would be written in an understandable manner, backed by careful investigation and much thought on the author's part and should prove of great worth.

Would it be possible to publish at certain intervals practical articles dealing with the more recent and well tried out treatment of disease? Such articles as these are appearing in the *Journal of the American Medical Association* under the "Treatment of the Cook County Hospital," and, I think, are exceedingly valuable to the general practitioner. Some of us do not see enough cases of certain types to be well versed in the newer methods of therapy and very often it is difficult to find what these should be, even in the recent textbooks, so rapid is the change and so frequently are newer and very well-tried methods of treatment brought in. It is only by the everlasting repetition of reading about treatment that we can learn and remember the newer things.

I feel it is important that the medical extension courses of our Society should succeed, for they have started so well. Their future success depends on many factors. The subjects to be talked about must be of interest; this is taken care of by allowing the members to choose their own subjects; if they are not well received the various District Societies have only themselves to blame for the topics are varied enough to appeal to everyone. The speakers must talk the same language as the audience. It is wasteful to have a superscientific man talk to a group of general practitioners about something of which they understand one word in three; and finally the speaker himself must not only know his subject, but be able to tell about it in a short, concise, simple way. It would be a great addition to the practical value of the courses if it were possible at each exercise to exhibit patients portraying the disease or subjects which were being talked about. It is not uncommon soon to forget what is said and to lose the good of the lecture; the interpretation of vision, when added to that of hearing, makes the memory a much more lasting one.

In conclusion, it seems to me that in Massachusetts and for members of the Massachusetts Medical Society the opportunities for an improved postgraduate medical education are numerous. At present they are not sufficiently used and enjoyed. There should be greater cooperation among all members of the medical profession and all should take better advantage of our chances for improving our medical knowledge. If we would work together the standing of our profession would soon be what it should be, a hiding place from the wind, a covert from the tempest, a river of water in a dry place, and the shadow of a great rock in a weary land.

CHRONIC ARTHRITIS IN HYPERTHYROIDISM AND MYXEDEMA*

BY ROBERT T. MONROE, M.D.†

HYPOTHYROIDISM as a factor in chronic arthritis was stressed in a recent report by F. C. Hall and the writer[1]. Of one hundred and fifty cases of hypertrophic arthritis, one-third showed basal metabolic rates below minus 15 and one-half were benefited by taking desiccated thyroid. In an equal group of patients with atrophic arthritis, one-sixth showed similar findings. These experiences have been confirmed in the two succeeding years by continued observation of the same patients and by study of a large number of new ones.

Two questions naturally arose: Is such clinical evidence sufficient proof of true myxedema of some degree, or may it point to a functional and temporary impairment of the thyroid gland, or may it point only to hypometabolism the results being due to psychotherapy? We considered these possibilities in the paper referred to, and intend to report later on studies of the cholesterol content of the blood in patients with arthritis, since it has been shown that this substance is present in excess in myxedema as contrasted with its normal level in other conditions causing low metabolic rates. The second question was, what is the relative frequency of arthritis in patients with myxedema and in others with hyperthyroidism? The present communication is an attempt to answer this.

ARTHRITIS AND HYPERTHYROIDISM

Over a twenty-year period to December, 1933, there have been 414 patients on the medical wards of the Peter Bent Brigham Hospital with hyperthyroidism. Of these, 374 (90 per cent) had no history of joint pain and physical examination showed no arthropathy. Sixteen had had transient arthralgias or myalgias without objective evidence of joint disease. Fourteen had had attacks of atrophic arthritis and three had had bursitis at one time or another. Only seven (1.6 per cent) were found to have hypertrophic arthritis.

One of the latter group was found to have spurs on the lumbar vertebrae in a plain film of the abdomen taken to demonstrate calculi in

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the gall bladder. Although no stones were seen, no suggestion was offered that the symptoms were arthritic in origin. The diagnosis of hyperthyroidism was questionable in another, the elevated metabolism being ascribed at least in part to the presence of active infection. All of them were considerably older than those without joint pain, their average age being sixty as compared with thirty-six, and they all had important vascular disease. Other causes of joint pain were present, such as faulty body mechanics in three and frequent trauma in one. One woman of sixty-eight who had suffered from backache for fifteen years noticed that it disappeared with the onset of symptoms of hyperthyroidism.

It has not been possible to determine the course, relative to arthritis, of the patients in this group after the removal of the thyroid gland in whole or part. There were, however, fifteen patients who entered the hospital for various illnesses who were found to have had subtotal thyroidectomies for hyperthyroidism in the past. Six of them (40 per cent) had no joint symptoms from one to nineteen years after operation, while the remainder reported the onset or exacerbation of hypertrophic arthritis since that time. Symptoms came on in six within a few weeks of the operation, while in the rest they were delayed for one, two, and fourteen years. Basal metabolic rate determinations showed no definitely abnormal levels, and the arthralgias were usually considered to be psychogenic in origin until it was found that the administration of thyroid gland was of value and that typical physical or Roentgen-ray appearances of arthritis supervened. One of the two patients who had arthritis previous to operation was a woman who for twenty years had had attacks of hyperthyroidism between which her joints caused distress; immediately following removal of the thyroid gland there was a rapid progression in the severity of the arthritis. The other was a woman who had been studied in our wards for hypertrophic arthritis and scleroderma; about a year later she developed typical hyperthyroidism and the gland was removed in another hospital; two years later she returned to us, the scleroderma gone, but the arthritis worse than ever.

It would be interesting to know what are the chances of arthritis in individuals with adenomatous goiters. Hospital statistics are misleading in this regard, for the diagnostic summaries list only those diseases which appear to be of importance in each instance. I have, however, had five patients in the arthritic clinic in whom such glands seemed significant. Four women developed hypertrophic arthritis immediately, one, three and four years after thyroidectomy which was performed for obstruction in one and toxicity in three. Another woman had a very destructive form of atrophic arthritis for seven years, which resisted all efforts to control or alleviate. When she came to the clinic, her dyspnea attracted my attention to an obstructing goiter, and it seemed possible to attribute some of her troubles to chronic anoxemia. She consented to operation, and promptly thereafter made a remarkable improvement in general health. Her arthritis then became quiescent for the first time, and has continued so for more than a year.

ARTHRITIS AND MYXEDEMA

Over the same twenty-year period ninety-eight patients were found to have spontaneous or acquired myxedema. Of these fifty-eight gave no indication of arthritis, and five had arthralgias with no record of abnormal appearances in joints. Three had atrophic arthritis with a low grade fever and typically destructive lesions in various joints. All the rest of the group (32.6 per cent) had hypertrophic arthritis. This diagnosis was based in three instances on roentgenological evidence alone, there being no history or physical signs pointing to it. The others offered entirely satisfactory symptomatic and objective data. A dozen stated that rheumatism constituted the major portion of their disability.

The average age of the patients with myxedema was fifteen years in excess of that of the patients with hyperthyroidism. Vascular disease was very common, yet it was about equal in those with and without arthritis. Those with arthritis occasionally had some obvious explanation for their joint pains, as mechanical strains, fatigue, alimentary disturbances, or menopausal distress; but in the majority such factors were not found. The hypothyroid state alone seemed to be the sole reason for their suffering.

The association of arthritis and myxedema was striking in certain instances. One woman, for example, developed myxedema and a painful back simultaneously; exhibition of thyroid gland substance relieved both, and she remained well for the eight years in which she was observed. Another woman had a curious cyclic quality to her hypothyroidism for fifteen years. When it was active she suffered from arthritis which in the spontaneous remissions was arrested.

COMMENTS

Table 1 shows the comparative incidence of all types of chronic arthritis in the two groups that were studied. The rarity of the disease in hyperthyroidism is noteworthy. A few had suffered at times from minor pains in muscles and joints which were not distinctive enough to attract attention and which responded readily to measures designed to reduce the activity of the thyroid gland. Those who had had atrophic arthritis were not suffering from it at the time of their treatment for hyperthyroidism. In the active stage this form of arthritis may

paint a picture which is suggestive of an increased metabolic rate. Cachexia, vasomotor instability, and loss of weight are responsible in part, for it has been our experience that the rate is normal at such times, or elevated only to the degree that might be expected with fever. No case was found in which active hypertrophic arthritis coexisted with hyperthyroidism without some other more likely pain-producing factor being present. It is probable that these patients were on the whole too young to warrant an expectation of arthritis in many of them.

TABLE 1

THE INCIDENCE OF ARTHRITIS IN HYPERTHYROIDISM AND MYXEDEMA

	Hyperthyroidism	Myxedema
No joint symptoms or signs	90.3%	59.1%
Arthralgias and myalgias	3.8	5.1
Bursitis	0.7	—
Atrophic Arthritis	3.3	3.0
Hypertrophic Arthritis	1.7	32.6
Total number of cases	414	98

There is, however, a suggestion that, in a few cases at least, the excessive thyroid function was beneficial to the joints.

Duncan[2] has reported cases of arthritis with hyperthyroidism and intractable pain relieved only by thyroidectomy. I am not aware of having seen such cases, save in the instance referred to, of the woman whose severe arthritis was arrested by the removal of an obstructing goiter.

Arthritis was present in some form and degree in about one-third of the patients with myxedema, and in more than one-half of the small group whose thyroid glands had been removed for hyperactivity. Their average age (fifty-one years) places them at a time when, according to Keefer and Myers[3], the majority of all individuals can be shown to have hypertrophic arthritis. There is a growing tendency to regard this form of the disease as a natural part of the process of senescence[3]. To this belief the writer heartily subscribes. Yet no one is prepared to assert that a majority of the middle-aged or elderly suffer from arthritis. The diagnosis is made only when the patients' symptoms indicate that the "worn-out" joints are important. Such a policy was followed in our cases with the exception of three that have been mentioned. The incidence of clinical joint distress in this group of patients with myxedema seems significantly in excess of that which is met with in their contemporaries with or without other disease.

As a general rule, the more severe the myxedema, the less intense is the suffering from arthritis. A lack of the thyroid hormone decreases the rate of circulation of the blood and slows up all bodily processes. The movements are slow, speech is deliberate, appreciation of nervous stimuli is dulled almost to a state of lethargy. Mechanical influences are reduced to a minimum and the enforced rest is soothing to the roughened joints. The dangers of prolonged existence in this state are well-recognized in the tendency of these patients to develop early and extensive arteriosclerosis. There is an equal tendency to develop osteophytic outgrowths along the spine and in other weight-bearing joints, so that the appearance of arthritis on physical or roentgenological examination may be surprisingly in excess of the patient's disability. Those who get into trouble are either ones with lesser or varying degrees of myxedema, or are ones whose ambition and energy are preserved and force them to attempt life on a normal scale of activity in spite of their disease.

This is the sort of patient who has been so frequent an applicant to our arthritic clinic. The combination of normal "drive" and subnormal capacity makes for fatigue. His (usually her) haggard, weary expression fits well with his story of economic, physical or spiritual burdens, yet one often feels that the prostration is out of all proportion to that of many others exposed to similar trials. His nervous exhaustion is displayed in his absorption with the picayune details of existence, in his inability to rise above his situation. He works in a bushel basket, he is convinced that there is no way to alter his schedule, and he worries incessantly. His painful joints, his stiffness after rest or on arising in the morning lead him to fear invalidism. He forces himself to keep in motion to prevent ankylosis. As a result of all this he is wide-eyed, tremulous, irritable, constantly in action. He is the last person one would ordinarily think of having hypothyroidism.

The diagnosis is rendered still more difficult by the fact that the first determination of the basal metabolic rate is apt to be normal. Inquiry alone reveals that the patient was far from being relaxed during the test. A haphazard trial of thyroid therapy may only accentuate his nervous state. So unsatisfactory have the routine diagnostic procedures proved in the ambulatory group that we deal with, that it has become my custom to insist on rest for a few weeks before undertaking further investigation. A metabolism test then is more truly basal, and the use of thyroid extract is more likely to be productive of good results.

Speculation as to the nature, causes and incidence of hypothyroidism is beyond the scope of this paper. The frequency of its association with chronic arthritis of the non-infectious, hypertrophic type should be known to all who are called upon to treat that complex malady.

CONCLUSIONS

1. The incidence of atrophic arthritis in myxedema and hyperthyroidism is low, probably no more than would be expected statistically.

2. Hypertrophic arthritis occurred in 1.7 per cent of a series of 414 cases of hyperthyroidism, and in these the relationship seemed to be without significance.
3. Hypertrophic arthritis occurred in 32.6 per cent of ninety-eight patients with myxedema, and in a majority of a small group of patients whose thyroid glands had been removed previously for hyperthyroidism. Here the association seemed intimate and important.

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AURICULAR FIBRILLATION AND AURICULAR FLUTTER IN THE COURSE OF SUBACUTE BACTERIAL ENDOCARDITIS*

Report of a Series of Cases

BY MAURICE S. SEGAL, M.D.†

THROUGH the studies of Libman and his school[1, 2], Blumer[3], Thayer[4, 5], Horder[6, 7] and Levine[8, 9, 10], it has been generally accepted that the occurrence of cardiac irregularities, particularly auricular fibrillation, is unusual in the course of active subacute bacterial endocarditis. However a few individual cases of these irregularities have been studied throughout the course of illness and have been reported together with autopsy protocols.

Sprague[11] has described a twenty-four year old male with preëxisting auricular fibrillation abolished by quinidine sulphate. The fibrillation returned at the onset of the subacute bacterial endocarditis and persisted up to the time of death, six months later. The patient died of congestive heart failure. At autopsy the mitral valve showed evidence of regurgitation and measured 15 cm. in diameter.

De la Chapelle and Graef[12], have reported two unusual cases of subacute bacterial endocarditis with electrocardiographic studies. The first case demonstrated changes in conduction time and will not be discussed here. The second case was similar to one which is to be given in the present report. The patient was a thirty-three year old male. The cardiac rhythm was normal except for premature beats. His clinical course was that of a typical subacute bacterial endocarditis with streptococcus viridans blood cultures. Serial electrocardiograms, taken over a period of eleven weeks, revealed prolongation of the P-R interval (.22 to .36 seconds) until three weeks before death. Intraventricular block was present throughout and the QRS complex measured .10 to .12 seconds. Auricular premature beats were recorded four times and a shifting pacemaker once. Auricular flutter with varying block was recorded once but did not reappear. The patient died approximately ten weeks later. Tachycardia of unexplained origin (probably sinus) occurred during the last two days of life. No mention is made of digitalis therapy. At autopsy, vegetations were found on the mitral and aortic valves, the chordae tendineae and the endocardium of the left auricle. The mitral cusps were but moderately thickened and the orifice was not stenosed. The chordae tendineae were hypertrophied and shortened. No evidence of Aschoff granulomata was found.

So far as is known this is the first recorded case of auricular flutter in the course of active subacute bacterial endocarditis. One case is mentioned briefly in the comprehensive review by Blumer[3]. Rothschild, Sacks and Libman[2] noted the occurrence of auricular flutter in a "bacteria free" case. Their observations show that the incidence of irregularities in the "bacteria free" group is about the same as that of rheumatic heart disease. McMillan and Bellet[13], reviewing sixty-five cases of auricular flutter, failed to reveal any with underlying subacute bacterial endocarditis.

In a later paper, de la Chapelle and Graef[14] reported the case of a twenty-five year old female with rheumatic endocarditis and with electrocardiographic evidence of auricular fibrillation for twenty-one months prior to death. The terminal subacute bacterial endocarditis infection was believed to have occurred nine months before death. During this period all electrocardiograms revealed auricular fibrillation. Autopsy revealed subacute bacterial endocarditis of the mitral valve and the aortic valves and chronic valvulitis of the mitral valve with stenosis and regurgitation. The mitral valve was but moderately stenotic and measured 10 cm. in circumference at its base. No Aschoff bodies were found in the microscopic sections.

The occurrence of auricular flutter and auricular fibrillation in the course of active subacute bacterial endocarditis was recently observed at the Boston City Hospital. Since 1900*, 192

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*The rhythmic abnormalities in the course of subacute bacterial endocarditis compared with those occurring in the course of rheumatic heart disease. (Submitted for publication.)

cases of subacute and acute bacterial endocarditis have occurred in this hospital. In this group there were five cases of auricular fibrillation and two of auricular flutter. The clinical course and autopsy abstracts of two of these cases are presented because of the many manifestations of unusual rhythm in the course of active subacute bacterial endocarditis.

(Case No. 1—E. F.*) The patient, a thirty-eight year old married white woman, entered another hospital complaining of weakness, generalized arthralgia and dyspnea of over two months' duration. On this admission repeated examinations of the heart showed no enlargement, normal rhythm, and presystolic and systolic murmurs at the mitral area. These were the same findings that had been recorded by her physician for some time in the past. During a two-week stay, two blood cultures revealed a streptococcus viridans. She then returned to her home and after two weeks entered this hospital because of chills and fever.

Past History. She had the usual childhood diseases. Since childhood she had complained of frequent sore throats and laryngitis. In recent years she had complained of moderate dyspnea on exertion, never enough to incapacitate her, however.

Family History. One of her brothers had chorea which lasted six weeks. The rest of the family were all living and well.

Marital History. The patient had been married for fifteen years. The husband was living and well. Her three children were all living. All were instrument deliveries associated with much bleeding. On each occasion she was warned that she had valvular disease and was advised to do no difficult work. Her second child, a twelve year old girl, was being treated for rheumatic heart disease.

Course in Hospital. The course was that of a typical active subacute bacterial endocarditis. The temperature chart was that of a hectic septicemia. Showers of petechiae appeared from time to time. Evidence of emboli to the brain, spleen and kidney was observed. Six blood cultures throughout course of illness were positive for streptococcus viridans. A moderate leucocytosis and hypochromic microcytic anemia persisted. The Kahn test was negative. The blood nonprotein nitrogen determinations were usually normal except on one occasion when it rose to 55 mgm./100 cc. An x-ray film of the chest was interpreted as demonstrating a rheumatic heart deformity.

The cardiac examination was essentially the same throughout and revealed active double mitral murmurs with distant murmurs at the aortic area. From time to time a distant friction rub along the left border of the sternum was heard. During the first two months of illness the cardiac rhythm was always observed to be normal except for sino-auricular tachycardia at times. Electrocardiograms were essentially normal as to rhythm, but T wave changes suggested myocardial involvement. On the morning of November 22, 1934, approximately two months after admission, the patient appeared very apprehensive and complained of cardiac consciousness and pain in the left upper quadrant. She felt nauseated and soon after vomited. She stated that during the night she was conscious of her heart pounding more actively than before. The cardiac rhythm was extremely rapid and totally irregular. The murmurs were indistinct and timing impossible. An electrocardiogram revealed auricular flutter with the auricular rate 300 and ventricular rate 190. Aberrant ventricular beats were observed in lead I. The QRS interval was .07 seconds. The axis was normal.

Pressure on the vagi and carotid sheaths did not stop the auricular flutter. The flutter persisted throughout the day and the early hours of the following morning. The patient had not been receiving digitalis. She was given digitalis, grains 1½, subcutaneously for five doses during a period of twelve hours. This was discontinued when the rhythm changed. On the following morning it was noted by many observers that the rhythm was that of auricular fibrillation. Unfortunately an electrocardiogram was not obtained at this time. Shortly afterwards the rhythm had changed to that of a tachycardia with frequent extrasystoles. An electrocardiogram at this time revealed normal sinus rhythm (rate 94), with ventricular premature beats in lead I. Later that same day, the rhythm was that of a sino-auricular tachycardia, rate 103, with ventricular premature beats from varying foci. From this time on until death, the ventricular extrasystoles became fewer in number, and there was no return to the previously observed arrhythmias.

(Case No. 1—E. F.)

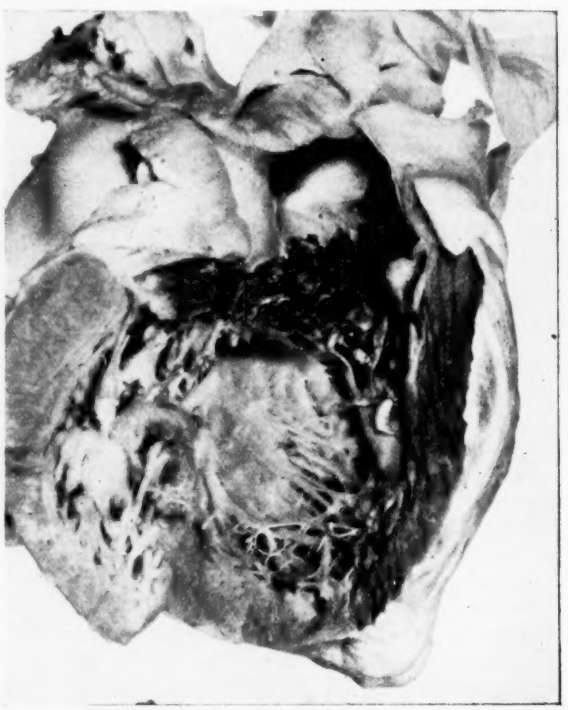


FIG. 1.

Photograph of the mitral valve demonstrating the vegetations in the patient who developed auricular flutter in the course of subacute bacterial endocarditis. The mitral valve was but moderately stenosed and measured 9.5 cm. in circumference. Similar vegetations were found on the aortic cusps.*

The patient went into coma about one week before death with physical signs of bronchopneumonia at the right base. Thirteen days after the observed arrhythmia she died of overwhelming toxemia, bronchopneumonia and terminal circulatory failure.

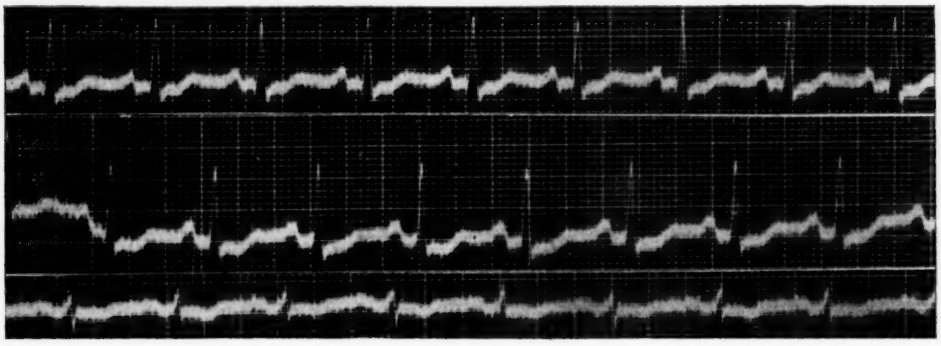
Autopsy revealed old rheumatic endocarditis with mitral involvement and superimposed subacute bacterial vegetations on the mitral and aortic valves. In addition cardiac hypertrophy, bronchopneumonia, bi-

*Dr. Louis F. Curran kindly granted permission to publish this case.

*Dr. George K. Mallory kindly photographed this specimen.

FIG. 2a.

Electrocardiograms in the patient (1—E. F.) who developed auricular flutter in the course of subacute bacterial endocarditis.



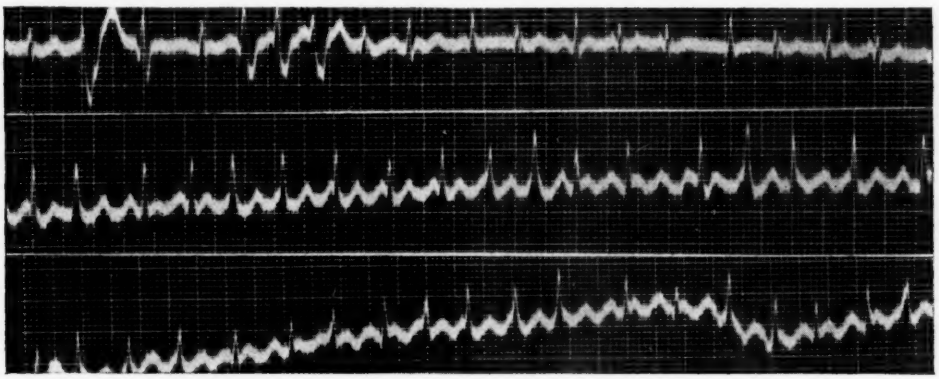
9/21/34

Taken Two months before occurrence of auricular flutter. Patient was getting small amounts of digitalis.

Interpreted

Normal sinus rhythm. Rate 100. PR interval .16. QRS interval .07 with slightly low origin of complexes.
T 1, T 2, diphasic with low origin.
T 3 inverted with low origin.
T waves consistent with digitalis effect.

FIG. 2b.



11/22/34

Taken Approximately 8 hours after onset of auricular flutter. Patient had not received any digitalis for about 1 month.

Interpreted

Auricular flutter. Auricular rate 300. Ventricular rate 190.
Aberrant ventricular beats lead I.

FIG. 3.

E. F. 11/23/34

Taken 1:30 P.M., approximately 5 hours after change of auricular flutter to auricular fibrillation. The latter was observed clinically. Patient was receiving digitalis.

Interpreted

Sino-auricular tachycardia. Rate 103. PR .18 seconds. QRS .08 seconds. T 1 inverted, T 2 T 3 inverted with upward convexity of ST.
Ventricular premature beats from varying foci.
Normal axis.

The rhythm remained essentially the same except for fewer extra systoles until death 13 days after the observed flutter.

lateral slight hydrothorax, chronic passive congestion of the liver and multiple infarcts of spleen and kidneys were found. The heart weighed 450 grams. The chordae tendineae were thickened and shortened and the endocardium of the left auricle had small white headed rheumatic nodules. The mitral orifice was covered with yellowish-red fungating vegetations which completely covered both leaflets of the mitral valve. There were several similar vegetations, measuring 2 mm. in diameter, on the endocardium of the left auricle immediately above the valve.

Similar vegetations were found on the ventricular surface of all the three aortic cusps. The largest, measuring 1.5 cm. in diameter, was on the right posterior cusp. These did not appear to interfere with the function of the aortic valve. All the vegetations were friable but adherent to the valves. The tricuspid and pulmonic valves were not involved. The circumference of the valves was as follows: tricuspid, 12.5 cm., pulmonary, 7.2 cm., mitral, 9.5 cm. and aortic, 6.6 cm. The left ventricular wall measured 1.5 cm. and the right .5 cm. There were no Aschoff bodies seen in the microscopic sections.

This case is described as an example of auricular flutter and fibrillation occurring in the course of active subacute bacterial endocarditis which, at autopsy, revealed but moderate mitral stenosis. The photograph of the heart at autopsy and representative serial electrocardiograms are included. (Figures 1, 2, and 3.)

(Case No. 2—S. C.) The following is a case of subacute bacterial endocarditis which developed a partial heart block. Later auricular fibrillation occurred and persisted for five weeks until death.

The patient, a thirty-five year white male, first entered the out patient department because of an indolent varicose vein ulcer. A cardiac disorder was recognized and he was advised to enter the hospital.

On admission, he gave a history of sore throat for the past month, and cough and swollen legs for about one year. He stated that he had attacks of sore throat "yearly". At the age of three he was very ill. The nature of this disease was unknown. Since childhood he had been aware of "extraordinary forceful heart action".

Physical Examination revealed a well-nourished white male. The skin was warm and moist. Petechiae were observed in both conjunctivae. The heart was generally enlarged. The blood pressure was 140/40. The rhythm was regular except for many extrasystoles. There was a loud systolic murmur all over the precordium with a diastolic murmur in the aortic area and along the left border of the sternum. The remainder of the examination was essentially negative except for a small varicose ulcer on the lower third of the left leg.

During a four months' hospital stay his temperature was septic, and the pulse rate ranged from 80-100. He received no digitalis until the day before death. During the first week extrasystoles were the only irregularity noted. On the eighth day, frequent dropped beats at the pulse were noted. On the ninth day an electrocardiogram revealed sino-auricular tachycardia, rate 115, a P-R interval of .28 to .44 seconds, QRS interval .08 seconds, T1 and T2 up and T3 flat, and left ventricular predominance. The interpretation was that of a partial heart block with frequent dropped beats. About two months later an electrocardiogram revealed auricular fibrillation with a ventricular rate of 80 and no other abnormalities. It was not mentioned whether this irregularity was observed clinically before being demonstrated by the electrocardiogram. From this time on, however, the auricular fibrillation persisted until death ensued five weeks later. Another electrocardiogram on the day before death revealed auricular fibrillation and many premature beats. During the course of illness a moderate leucocytosis and progressive hypochromic microcytic anemia were present. The blood cultures were positive for the streptococcus viridans on four occasions. It was believed that death was due to a terminal bronchopneumonia and circulatory failure.

At autopsy subacute bacterial vegetations involving the mitral and aortic valves, cardiac hypertrophy and dilation, aortic insufficiency, bronchopneumonia, bilateral hydrothorax, splenic infarction and cloudy swelling of the kidneys and liver were found. The heart was markedly enlarged and dilated and weighed 910 grams. There were several fresh vegetations on the leaflets of the mitral valve extending down the chordae tendineae and upward involving the aortic valve. The aortic valve was markedly thickened by the vegetations and two of the cusps were fused together. The right atrium and ventricle were dilated. The pulmonary and tricuspid valves were negative. The valves measured in circumference; tricuspid, 13.3 cm., pulmonary, 9.4 cm., mitral, 12.1 cm. and the aortic, 7.9 cm. The left ventricular wall measured 1.8 cm. and the right .3 cm. No Aschoff bodies were found in the microscopic sections.

(Case No. 3—J. D.) The following case was the only one with established auricular fibrillation and rheumatic heart disease which subsequently developed subacute bacterial endocarditis.

The patient, a thirty year old male, had entered twice previously within a period of six months. On each of these occasions the diagnosis was rheumatic heart disease with mitral stenosis and regurgitation, auricular fibrillation, cerebral and mesenteric emboli. Many electrocardiograms confirmed the clinical observations of auricular fibrillation. On a third admission, the course was more hectic than before and the patient appeared much worse. Auricular fibrillation was again observed and recorded by the electrocardiogram. The clinical impression was that of subacute bacterial endocarditis and this was confirmed by a streptococcus viridans blood culture. Although very ill, the patient insisted on going home against advice and could not be studied through to the termination of his illness.

(Case No. 4—H. S.) There was only one other case of auricular flutter which occurred in the course of subacute bacterial endocarditis.

The patient, a thirty-nine year old female, entered with a diagnosis of rheumatic heart disease. The rhythm was normal on admission. There appeared to be involvement of the mitral valve with a question of fresh pulmonic involvement in the course of the illness. The course was that of a hectic septicemia. A blood culture was positive for streptococcus viridans. On the second day, an auricular flutter with varying 3 to 1 and 2 to 1 blocks was recorded on an electrocardiogram. This persisted and was recorded on serial electrocardiograms to time of discharge two weeks later. Unfortunately, the patient left the hospital against advice at this time and could not be followed.

It is of interest that this patient and the one before were aware of "heart disease" practically all their lives.

(Case No. 5—A. N.) The following is a case of auricular fibrillation occurring in the course of active subacute bacterial endocarditis.

The patient, a forty-five year old female, was studied for six weeks. There was past history of

rheumatic fever. Physical examination revealed a rheumatic heart with mitral stenosis and regurgitation. The clinical course was that of a typical subacute bacterial endocarditis with a positive streptococcus viridans blood culture. The cardiac rhythm was observed to be normal on admission. During the last three weeks the rhythm was observed to be that of auricular fibrillation. No electrocardiographic studies were obtained. Death occurred at the end of the sixth week and was due to the overwhelming septicemia and a cerebral embolism. No autopsy was performed.

(Case No. 6—A. H.) There was but one case of auricular fibrillation in the course of acute bacterial endocarditis and this occurred as a terminal event.

The patient, a thirty year old female, entered with a story of cough, dyspnea and anorexia of eight months' duration. For the past eight years she had complained of many attacks of sore throat and polyarticular joint pains. The physical examination revealed an acutely ill woman with double murmurs at the mitral area. The rhythm was totally irregular with dropped beats at the pulse. The outstanding clinical features were a hectic septicemia, painful joints, purpura and a terminal meningitis. A blood culture was negative. She died four days after admission. At autopsy the outstanding findings were malignant endocarditis with acute vegetations on the left auricular wall and mitral valve and an acute purulent meningitis. The mitral valve was not stenosed and measured 10.2 cm. Cultures from the meninges yielded a gram negative bacillus and from the vegetations a gram positive coccus. No Aschoff bodies were found in the microscopic sections.

DISCUSSION

The infrequency of auricular fibrillation, either preceding or in the course of subacute bacterial endocarditis, has been discussed by many observers. The appearance of auricular flutter in the course of this disease is even more unusual. The case mentioned in Blumer's[3] report and the one described by de la Chapelle and Graef[12] were the only ones found in the literature. A review was made of 1149 cases* of active subacute bacterial endocarditis in which mention was made of cardiac irregularities. The present series was included in this review. Of these, only four were cases of auricular flutter, an incidence of .35 per cent, and twenty-four were cases of auricular fibrillation, an incidence of 2.07 per cent.

There have been varying opinions concerning the integrity of the myocardium in the course of subacute bacterial endocarditis. Blumer and others have stated that the myocardium is only rarely involved. Horder and others have called the disease an "endocarditis vera" in contrast to rheumatic heart disease where the endocardium, myocardium and pericardium are more frequently involved.

The association of auricular fibrillation with a failing myocardium has long been observed. Many investigators have stressed the striking maintenance of the integrity of the myocardium in subacute bacterial endocarditis and have thus attempted to explain the infrequency of auricular fibrillation in this disease. On the other hand, Clawson[15, 16], Libman[18, 19] and Saphir[20] have emphasized the frequent occurrence of myocardial lesions in subacute bacterial endocarditis. These authors have also found coexisting Aschoff bodies. No Aschoff bodies were found in the microscopic sections of the cases in this study. Furthermore, an average of eleven years had passed between the initial rheumatic infection and the terminal subacute bacterial endocarditis.

In a study of clinical and morphological data, Davis and Weiss[21] found that in rheumatic heart disease there were more cases of mildly stenosed than of severely stenosed mitral valves. In subacute bacterial endocarditis lesser grades were found more often because of the infrequency of the severer grades of stenosis in rheumatic hearts. Auricular fibrillation was found to be particularly associated with the advanced type of mitral stenosis and dilated auricles. They concluded that this relative infrequency of severe mitral stenosis, decompensation, and auricular fibrillation in subacute bacterial endocarditis was purely an accidental affair based largely on the fact that there were more rheumatic cases with regular rhythm than with auricular fibrillation.

In a recent study, de la Chapelle, Graef, and Rottino[22] concluded that auricular fibrillation did not depend upon the degree of mitral stenosis per se, but simply required some degree of stenosis. That their results suggest this conclusion cannot be denied. This view would appear to be contrary to the oft-repeated dictum that auricular fibrillation is more commonly associated with the severer grades of mitral stenosis. If there were more cases dying of congestive failure in their group with moderate mitral stenosis than in their group with severe mitral stenosis, the incidence of auricular fibrillation would be higher, no doubt, in the former group. Thus, it would appear to be difficult to draw any conclusions from morphological data without considering the functional integrity of the myocardium just before death.

In the present study, from both clinical and autopsy evidence, it was observed that when auricular fibrillation occurred in subacute bacterial endocarditis, the mitral valve was involved alone or in combination with the aortic valve. In no case at autopsy was there evidence of severe mitral stenosis. These observations occurred in the case reports as well. It will be recalled that the case of preëxisting auricular fibrillation described by Sprague, revealed mitral regurgitation at autopsy and the mitral orifice measured 15 cm. in circumference. The patient died of congestive heart failure. The case of preëxisting auricular fibrillation, described by de la Chapelle and Graef revealed at

*The rhythmic abnormalities in the course of subacute bacterial endocarditis compared with those occurring in the course of rheumatic heart disease. (Submitted for publication.)

autopsy but moderate mitral stenosis. The mitral orifice measured 10 cm. in circumference. The aortic valve was also involved. Their case of auricular flutter also showed both mitral and aortic involvement at autopsy. The orifice of the mitral valve was not stenosed. In the present report the case of auricular flutter and fibrillation had both mitral and aortic involvement at autopsy. There was evidence of auricular regurgitation, but no mitral stenosis. The mitral valve measured 12.1 cm. in circumference. The patient died of terminal circulatory failure. The author's case of terminal fibrillation in the course of acute bacterial endocarditis revealed only mitral involvement at autopsy. The mitral valve was not stenosed and measured 10.2 cm.

From the above, it will be seen that mitral stenosis was either absent or present in mild degree only. Furthermore, over fifty per cent of these reported cases died of myocardial insufficiency. Inasmuch as it is widely accepted that auricular fibrillation is more commonly associated with more severely stenosed mitral valves, these findings at first may appear to be out of keeping with this teaching. However, we believe that the integrity of the myocardium as a whole is responsible for the occurrence of auricular fibrillation in subacute bacterial endocarditis rather than any particular grade of mitral stenosis per se.

SUMMARY

1. A review of 192 cases of bacterial endocarditis revealed two cases of auricular flutter and three cases of auricular fibrillation in the course of subacute bacterial endocarditis. One case of auricular fibrillation appeared in the course of acute bacterial endocarditis. The case reports with autopsy protocols are included. Additional case reports from the literature are included.

2. The cases of auricular fibrillation or flutter occurring in the course of active subacute bacterial endocarditis all showed evidence of mitral valve involvement alone or in combination with the aortic valve.

3. In the cases of fibrillation or flutter, when the mitral valve was involved by the vegetations, there was found either a normal mitral orifice, mitral regurgitation, or moderate mitral stenosis. No cases of severe mitral stenosis were found. The circumferences of the mitral orifices ranged from 9.5 cm. through 15 cm.

4. Terminal circulatory failure was found in fifty per cent of the cases of auricular fibrillation or flutter in the course of subacute bacterial endocarditis.

5. The rare incidence of auricular fibrillation in the course of active subacute bacterial endocarditis cannot be attributed entirely to the rare incidence of severe mitral stenosis in this disease.

6. The integrity of the myocardium and the underlying physiological and biological state would appear to be more closely related to the pathogenesis of auricular fibrillation than the grade of mitral stenosis per se.

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THE TILTED PELVIS AND SCOLIOSIS TREATMENT: PREVENTIVE AND OPERATIVE*

BY SETH M. FITCHET, M.D.†

IN a previous communication, "Flexion Deformity of the Hip and the Lateral Intermuscular Septum"[1], the rôle of the iliotibial band and its chief insertion, the lateral intermuscular septum, was emphasized as *the* deforming factor in so-called "flexion deformity of the hip", when this flexion was a sequel to poliomyelitis. It was pointed out that this "hip flexion" was in reality an abduction and that by section of the iliotibial band and its insertion, the intermuscular septum, the deformity of abduction was readily corrected. Attention was called to the well-known fact that the tensor fascia femoris and a large portion of the gluteus maximus muscle insert into the fascia lata and continue down the thigh jointly as the iliotibial band inserting chiefly into the outer tuberosity of the tibia. These are the structures most involved in abduction deformity.

The fascia lata is attached to the femur throughout its length by means of intermuscular septa which arise from it. The lateral intermus-

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cular septum is an extremely strong structure uniting the posterior edge of the iliotibial band firmly to the femur. This septum lies between the vastus externus and the short head of the biceps femoris.

The tensor fascia femoris is not only a tensor of the fascia, but it is also an abductor of the thigh. The gluteus maximus inserting into the fascia lata is also a tensor of this fascia as well as an extensor of the hip. The gluteus maximus is therefore important in abduction deformity of the hip. The tensor fascia femoris and the gluteus maximus acting through their common insertion, the iliotibial band, are definitely abductors of the thigh. The fact that the tensor fascia femoris and the gluteus maximus are also abductors of the thigh by virtue of the strong attachment of the whole of the fascia lata to the femur by the lateral intermuscular septum is not generally recognized.

The purpose of the present report is to call attention to these same structures in producing the commonly observed tilt of the pelvis in all patients who have tight iliotibial bands and intermuscular septa and, therefore, abduction deformities of the hips.

This must be so. The anterior superior spine and the lateral crest of the ilium are connected by a strong band to the external condyle of the femur. When this band is abnormally tight, the femur is abducted. To bring the femur into adduction without flexion (neutral position), the tight, non-elastic band will tilt the pelvis down on the affected side.

Furthermore, this report calls attention to these same structures, the iliotibial band and the intermuscular septum, producing, through the tilted pelvis, the commonly observed scoliosis. This scoliosis is a compensatory mechanism.

In a later communication it is planned to report in figures the incidence of tilted pelves and scolioses associated with abnormally tight lateral structures of the thigh. Until the above survey is complete, and until accurate figures are tabulated, it may suffice to say that it is believed, on the basis of observation, that in more than fifty per cent of the patients who have scoliosis following an attack of poliomyelitis, involving chiefly the lower extremities, it can be demonstrated that the scoliosis is in a large measure secondary to a tilted pelvis, and that the tilted pelvis is produced by abnormally tight lateral structures of the thigh.

It should be noted that this statement is specific and intentionally eliminates scolioses which are due chiefly or solely to involvement of structures above the level of the pelvis, particularly the abdominal group of muscles.

If these apparent facts are substantiated by a large number of cases, as they have been in a small number, then the conclusion is obvious that scoliosis of poliomyelitis origin, as above noted, can be prevented by early recognition and section of the structures at fault; and that the later stages can be cured if not so old as to have produced marked bony changes; and that it can be improved even in the presence of marked bony changes.

It has been necessary, in connection with abduction deformity of the hip of slight degree, to indicate the method of choice in making the examination. It is not always easy to determine small degrees of abduction deformity. The method suggested is as follows: The patient should lie prone across a bed or examining table, the thighs flexed at right angles to the body. The left hand of the examiner is widely spread across the pelvis of the patient to immobilize the pelvis as much as possible. The right hand of the examiner grasps one ankle of the patient, flexes the patient's knee to a right angle, and then, taking care to have the thigh in a neutral position in so far as adduction and abduction are concerned, he slowly extends the thigh on the body until such time as he can assure himself that the extension of the thigh is beginning to move the pelvis. At this point, just when the pelvis moves with the extending thigh, the thigh is shifted into a position of abduction and extension of the thigh continued. If the abducted thigh will extend or hyperextend beyond the point of extension reached when the thigh was in the neutral position, without moving the pelvis, there is an abduction deformity present. The same maneuver is, of course, carried out on the opposite extremity.

Another, but supplementary, examination which in many cases will illustrate well the influence of the lateral fascial structures in producing the scoliosis may be made as follows: With the patient in the prone position, as above, and with the thigh extended, the thigh is markedly adducted. As the thigh is adducted it will be noted that the tilt of the pelvis is correspondingly increased, and as the tilt of the pelvis is increased there will be an increase in the scoliosis. This same demonstration can be made with the patient standing on a block of wood so that the foot on the side being examined clears the floor.

The operation suggested previously has been found wholly satisfactory.

An incision about three inches long is made over the iliotibial band extending about two inches above the proximal level of the patella and about one inch below, and carried down to the iliotibial band. A one to three inch segment is removed, and the fascia lata sectioned anteriorly and posteriorly sufficiently to relieve tension. This is never done subcutaneously.

Very close to the posterior margin of the iliotibial band and structurally continuous with it, the tight intermuscular septum is identified lying between the vastus externus muscle an-

teriorly and the biceps posteriorly. A section of this septum, one to three inches long, is removed. In cases of marked deformity the septum may be stripped one-half to two-thirds or even all the way up the femur to the level of the great trochanter.

Section of the iliotibial band and the intermuscular septum usually permits the hip to drop into complete extension in the adducted position. The importance of the division of the septum as well as the iliotibial band is appreciated by observing the widening of the gap in the divided band as soon as the septum is released. The operation is completed by mere closure of the wound.

While the recommended operation is the one noted above, it is recognized that in a limited number of patients with very marked deformity a more complete operation may be done by, in addition to the above, carrying the procedure up to and around the great trochanter of the femur. It has been pointed out that the gluteus maximus is an abductor of the thigh and that it inserts into the fascia lata. The gluteus maximus also inserts into the great trochanter as do the covering fasciae of the tensor fascia femoris, gluteus maximus and gluteus medius. The fascial covering of the sartorius at its origin and near the anterior superior spine of the ilium blends with the fascia of the tensor fascia femoris. This intimate and strongly blended fascial covering of the upper lateral aspect of the thigh may be transected, as suggested by Soutter[2] and Ober[3], from and including the attachment of the sartorius to the anterior superior spine of the ilium to the great trochanter and along the insertion of the gluteus maximus. The skin incision is obviously a line from the region of the anterior superior spine of the ilium to the region of the great trochanter.

While not infrequently it may be desirable to do this last described procedure, it should not be done as a substitute for the first described procedure, but should be done, when done at all, as an additional procedure in selected and indicated cases of a severe grade of deformity.

After the above procedures, traction should be applied to the non-operated leg to correct the tilt of the pelvis and the associated, compensatory scoliosis. It has been found that ordinary skin and skeletal traction formerly used was not thoroughly efficient in correcting marked deformities, particularly the "fixed" type of scoliosis. Ober[4] suggested that Roger Anderson's[5] well-leg countertraction method had more power to correct "fixed" type. This type of skeletal traction is now used in all cases except the very mild deformities, and has been found to be by far the most satisfactory. Countertraction is obtained from the foot on the operated side. Care must be taken to see that the distance between the plaster encased feet is approximately the same as the distance between the acetabula. If the distance between the plaster boots is equal to the distance between the acetabula, the distance between the lateral margins of the boots will be approximately the same as the distance between the great trochanters.

This type of traction and countertraction will very quickly correct and overcorrect the tilted pelvis and the associated scoliosis, and tends to untwist the rotated spine.

From this point the recommendations become less definite. It is, of course, recognized that with varying degrees of scoliosis there are varying degrees of rotation of the spine, and with both there are varying degrees of bony deformity of the vertebrae. The complexity of the picture is markedly influenced by time and degree and by the very involved question of muscle balance, particularly those muscles of the trunk. For the moment it might be suggested that holding in an overcorrected position for weeks or even months may be the procedure of choice in the cases of milder degree, while fusion of the lumbar spine may well be indicated in the more severe cases. Jackets still have a wide field of usefulness.

Whatever the ultimate treatment may be, the above preliminary procedures appear to be essential to the correct approach of this troublesome problem.

A very troublesome problem and one that is commonly associated with the abducted thigh, tilted pelvis, scoliotic spine combination of deformities is an associated lordosis, a compensatory deformity which in this group of patients is chiefly due to the abducted thigh. The lordosis compensates for the flexion of the functioning hip, the so-called "hip flexion deformity".

The operative procedure for use in this group of patients will be the subject of a future communication.

May it again be suggested in summarizing that abduction deformity of the thigh subsequent to poliomyelitis is a preventable deformity; that abduction deformity of the thigh subsequent to poliomyelitis will produce a tilt of the pelvis and that this tilt of the pelvis will produce scoliosis, and that this scoliosis may be prevented by early recognition of the abduction deformity, and that the prevention, improvement, and cure of the type of scoliosis discussed here is possible by operative treatment, by section, of the lateral fascial bands and lateral intermuscular septum of the thigh.

Perhaps it is too much to ask acceptance of this thesis until such time has intervened as will permit compiling an overwhelming amount of figures and data, but the points above are published for the critical review of those who might in the meantime be interested.

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SURGICAL PROBLEMS OF FUNGOUS ORIGIN*

Report of a Case of Sporotrichosis in Massachusetts

BY J. G. DOWNING, M.D.†

MY purpose in presenting the following problems is to stress the need of examination of certain local and general diseases for fungi.

When one can address practically any audience (male or female) and feel certain that at least twenty-five per cent of those present are suffering from so-called "Athlete's Foot", no argument is needed to convince one that it is an ever-present disease despite all efforts which are now being used for its prevention.

Gilman recently examined five hundred (500) students and found that sixty per cent had a fungous infection of the skin; students at other institutions have shown as high as seventy per cent among the males and thirty per cent among females. Although the majority of these patients have a mild fungous infection which is not disabling, still there is the ever-present danger of an acute flare-up which might be serious.

Homans[1] stated that, "leaving out of consideration the possibility that the etiologic fungus may in time acquire such virulence as to become a cause of internal disorders, it may confidently be asserted that streptococcal infections, entering by way of the local lesion, are now so common that any lymphangitis or cellulitis of the leg not traceable to infection of a hair follicle or some trivial wound is almost certain to be due to this cause". He cites several cases—in one, the chain of events was the following: Epidermophytosis, secondary streptococcal infection, acute lymphangitis, cellulitis, secondary abscess of the inguinal region and popliteal spaces, and deep abscesses of the thigh. Fortunately these cases are not of frequent occurrence; however, recurrent attacks of a red, encircling band embracing the entire lower leg, resembling a mild cellulitis, should have a thorough examination to rule out the possibility of a fungous infection of the feet, e.g., on October 16, 1934 D. N., aged fifty, a male garment worker (work consisted of running a sewing machine by foot power) was examined. Two months previously he bumped his left lower leg on the machine while at work and about three weeks later he noticed that his leg was red, tender, and painful. At that time he was treated for a localized phlebitis of the lower leg; this eruption persisted and later became vesicular—when seen, his left lower leg was markedly edematous, red, and studded with large hemorrhagic bullae. Examination of the rest of his skin was negative except for the left foot—between the first and second toes there was marked maceration with a deep fissure of the interdigital skin; the interdigital skin of the other toes also showed a boiled-out, macerated condition. In this case the sequence was, a fungous infection of the skin, cellulitis, and a secondary dermatitis due to local applications.

J. M., a policeman, suffered from attacks of redness of his right leg—these attacks were accompanied by chills and fever; he was examined and showed a marked lymphangitis of the upper leg with femoral adenitis and a broad red band encircling the entire lower leg which on palpation presented a hot, tense, tender surface; examination of toes showed a marked fungous infection. On relieving the condition between his toes, the man had no more attacks of his leg condition. An acute exacerbation of a superficial mycotic dermatitis of the feet is occasionally accompanied by inguinal adenopathy without showing any visible lymphangitis. The question in these cases is whether this inguinal adenopathy is pyogenic, mycotoxic, or actually mycotic. However, Cleveland White[2] reported such a case in which there were markedly enlarged inguinal glands, no lymphangitis, no temperature but the patient showed a macerated, sodden area between all the toes with typical sharply-defined lesions on the dorsum of the foot and internal surface of the ankle. He took scrapings from between the toes, punctured a gland, and incised one gland; from the scrapings, puncture, and maceration of the excised gland, he grew a culture similar in microscopic and cultural aspects which was a trichophytin probably of the gypseum type. Furthermore, a positive trichophytin granulosum culture was secured by Sutter[3] from a retro-auricular node and the original focus, the scalp. In patients with lowered resistance or with a very virulent fungous infection, the organism may extend from the lymph system into the blood stream—this fact has been proved by Peck by positive blood culture[4].

Paronychias are painful and disabling affections and occasionally one finds one which despite proper surgical treatment continues to relapse. In this type, it is well to search for a yeast-like organism[5] or a Trichophytin, for these may be causes of persistent paronychia. Recently, two cases of yeast-like infection of the fingernails have been seen in bar tenders. When an abscess is opened, it is the custom of most surgeons to culture the purulent material on plain agar; if a tube of Sabourraud's culture media were also inoculated, more mycotic infections would be recognized, as for instance—

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W. B., a grocer boy, was admitted to the Skin Service November 4, 1933 (discharged well December 4, 1933). His chief complaint was a swollen right index finger and swollen lumps on his right arm of two months' duration. Present illness dated back four months when he injured his index finger on a nail in the cellar of his home; this abrasion he attempted to clean with a pen point and then bandaged it for two weeks; at that time swelling and redness appeared at the metacarpophalangeal joint of the same finger—since that time, the lesions have been growing slightly larger; have more or less coalesced; and from time to time have discharged creamy pus—there was a moderate amount of pain associated with the lesions. About two months before entry, a hard, tender swelling appeared just below the right elbow on the medial anterior aspect of the forearm; following this, more lumps appeared on the medial aspect of the upper arm, all similar in signs and symptoms—red, tender, rather hard, and varying in size from one to three centimeters. During all this time he was treated by poultices and incisions. Associated with the present illness there have been incidents of vomiting occurring four or five times, some headache, and a very slight dry cough. He lost about fourteen pounds during the past six months; there were no signs of pulmonary disease except the slight cough mentioned.

P. E.—A healthy appearing boy; skin lesions much as described above, in addition he showed some acne vulgaris on his face; multiple verrucae on fingers, and a herpetic lesion on upper lip; the lungs were clear and resonant throughout.

Course in hospital: T.P.R. — constantly normal; about one week before entry, lesion on right forearm reopened and seemed about to break down. In general, lesions remained about the same under treatment with boric acid ointment. Application of 1 per cent Tr. Iodine every six hours was started on November 14 and saturated solution of potassium iodide was begun on November 16 in increasing doses so that at the time of discharge he was getting 28 drops t.i.d. without untoward reactions. During the last week in the hospital he had a mild upper respiratory infection which rapidly cleared when he was kept in bed.

Laboratory tests:

W.B.C.—19,600.

Hemoglobin—90% (T.).

Kahn—Negative.

Urines—not remarkable.

Biopsy—decided against as it was feared that interference surgically might spread the infection further.

Cultures:

We were unable to demonstrate the fungus in the pus microscopically, but when cultured it gave rise to abundant colonies of Sporotrichum Schenckii.

Pus from the lesion on the hand was smeared on tubes of Sabourraud's agar. In four or five days numerous small whitish spots appeared, which developed into gray to black, slightly powdery, radially furrowed colonies. In the course of repeated subcultures the gross morphology of the colonies is seen to vary somewhat—the surface may be dry, powdery and slightly woolly or moist and glabrous; it may be smooth or radially furrowed, with or without a central knob and little spine-like structures made of aggregated hyphae; the color may vary from light gray to almost black, and be evenly distributed or in concentric rings. In some subcultures white glabrous segments appear, a phenomenon noted by several authors, and described by Davis[6].

The fungus isolated has the characters of Sporotrichum Schenckii (Hektoen and Perkins)[7]: mycelium, filiform, hyaline, septate; spores abovate, 3 x 5 microns, hyaline or light brown, borne on the sides of the hyphae and in clusters at the apices of short upright hyphae.

The pathogenicity of the organism has not yet been tested on laboratory animals.

Sporotrichum may be found anywhere and it is presumed that it gains entrance into the skin by way of some wound frequently brought about by injury with sharp objects such as grains, stalks, splinters, thorns (especially of the barberry bush); at the site of puncture, a nodule develops which later breaks down and looks like a primary lesion of syphilis; in a few weeks various firm nodules appear along the course of the lymphatics which later break down discharging a yellowish-gray pus—these heal, but frequently, unless proper treatment is instituted, a persistent sinus remains for a considerable length of time. Infection has been reported of the mucous membrane, bone, muscle tissue, eye, and testicle.

The old textbooks dwelt on actinomycosis, and every surgeon is on the lookout for the so-called "lumpy jaw" in its characteristic location, showing deep-seated painless nodules which break down into persistent sinuses discharging the characteristic granules in which the ray fungus may be found; but, as is shown in the case of Kovnat and Mezei[8], this fungous infection may appear elsewhere. The patient (a woman) first showed a chronic skin nodule on her thigh which she bruised and which became painful; the nodule was removed on October 28, 1931 with prompt healing—in December of that year, she suffered from chills, pains, headaches; she had a high temperature and showed all the signs of septicemia and a bacteremia. Later she showed lung signs, and microscopic examination of sputum showed definite mycelia and spores of the Streptothrix type. At this time, examination was made of the original nodule and this also showed similar mycelia and spores indicating that a relatively innocuous skin lesion present for years was the direct cause of a generalized infection resulting in death. Large doses of potassium iodide early might have prevented this result.

Blastomycosis is another organism widely distributed in nature. It is a very persistent organism; it has been demonstrated in decaying wood in the dwelling of a patient who suffered from this disease[9]; it may be either local or systemic. The treatment is early surgical excision[10] of the verrucous nodules with plenty of potassium iodide internally.

In children, kerion (a raised dome-like elevation of the scalp) may be mistaken for a carbuncle; it is easily recognized by microscopic examination of the hair immersed in potassium

hydroxide. Incision of this tumor gives little or no pus and may produce generalized dissemination of the fungi.

Tinea barbae has been confused with furunculosis.

One group of cases where microscopic examination is very simple and of immense value is the group of pulmonary abscesses. Smith[11], in an excellent review of this condition in children, stated that there are four possible routes by which the infecting material may reach the lungs—it may be introduced directly by a penetrating wound; it may drain in through the lymphatics; it may enter the blood stream as an embolus, or it may be aspirated. These pulmonary lesions are either bacterial, fusospirochetal, or fungous; the differentiation here is of prime importance for the treatment resulting from a study of the organisms may be serum if bacterial, arsenic if fusospirochetal, and iodide if fungous. In the classification of fungous diseases of the lungs, Smith listed eight yeast-like fungi; three mold-like fungi; and two higher bacterial forms. In this group of cases the possibility of aspiration is the most likely for it is very easy to inhale these organisms as has been shown in laboratory workers.

Conclusions: 1. Another case of Sporotrichosis in Massachusetts is reported.

2. Infections from fungi may be more important than simply a superficial dermatitis; they may be the focus for serious internal diseases.

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A STUDY OF HEART DISEASE AMONG VETERANS*

V. Syphilitic Heart Disease

BY PHILIP B. MATZ, M.D.†

THE incidence of cardiovascular syphilis varies with race, geographical location of the patients, age, etc. Thus Lamb and Turner found syphilitic aortitis in 107 of a series of 2081 autopsies at the Presbyterian Hospital, New York City, an incidence of 5.1 per cent. In a series of 4577 unselected autopsies in Minnesota, Clawson and Bell in 1927 found syphilitic aortitis in 2.6 per cent of the cases. Among 611 autopsies in patients of the Veterans' Administration, who had been under hospitalization for heart disease, sixty-five were found to have had syphilitic aortitis, an incidence of 10.6 per cent.

Due to an improved therapeutic regimen for syphilis it is found that there has been a decrease in the incidence of cardiovascular syphilis in recent years. At the Massachusetts General Hospital, in 1914, Cabot reported 12 per cent of a group of 600 cardiac cases as due primarily to syphilis; in 1928 at the same clinic, White and Jones reported 5 per cent of a group of 880 cardiac cases as due primarily or secondarily to syphilis.

SYPHILITIC AORTITIS

Syphilitic heart disease means essentially syphilitic aortitis with its complications, such as aortic insufficiency, aortic aneurysm, or syphilitic coronary disease. In about 20 per cent of cases syphilitic aortitis is not recognized clinically but is found at autopsy. The period in which the diagnosis of syphilitic aortitis is made with difficulty is known as the latent period. This varies from ten to twenty years; it is as a rule symptomless. When the condition becomes manifest it has reached an advanced stage of the disease. Two types of aortitis are usually seen, viz., with and without dilatation.

The most frequent complication of syphilitic aortitis is aortic insufficiency. This heart complication is a comparatively late sign of syphilitic heart disease. In a large number of cases of syphilitic aortitis reported by different observers, aortic insufficiency was found in 30 per cent of the cases.

Another complication of syphilitic aortitis is aneurysm. It is a localized saccular dilatation of the blood vessel. Frequently the aneurysmic dilatation may rupture. Aneurysm is observed in about 22 per cent of cases of syphilitic aortitis.

Stenosis and occlusion of the coronary arteries are frequent complications of syphilitic aortitis. They are found in about 17 per cent of the cases.

Of the group of 433 cardiac patients forty-one were cases of syphilitic aortitis, an incidence of 9.5 per cent. Of the forty-one cases

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twenty-eight were white patients; since 392 of the total group were white patients, the incidence of syphilitic aortitis among whites was 7.1 per cent. Of the forty-one cases thirteen were colored; since 108 of the total group were colored patients, the incidence of syphilitic aortitis in this group was 12 per cent. Of the group of forty-one cases of syphilitic aortitis, thirteen or 31.7 per cent were without dilatation; and twenty-eight or 68.3 per cent were with dilatation. In this connection it is of interest to note that three of the cases of aortitis were non-syphilitic.

A study was made of the age of occurrence of syphilitic aortitis. For this purpose twenty-nine cases were found to show the desired data. The average age at the time of the inception of syphilitic aortitis in this group of cases was found to be 33.6 years. The youngest patient was twenty years of age; while the oldest patient was sixty-three years of age.

A study was also made of the duration of syphilitic aortitis in the same group of twenty-nine cases. Among eighteen living cases of syphilitic aortitis the average duration from the date of inception to the date of this study was 8.6 years. Among eleven deceased patients the average duration was 5.2 years.

A study of the serological findings in the group of cases of syphilitic aortitis showed that 75.6 per cent gave evidence of a positive Wassermann test.

The most frequent clinical symptoms and signs of syphilitic aortitis noted in the group of cases were dyspnea, palpitation, precordial pain, fatigue, cough, swelling of legs, orthopnea, giddiness, and loss of sleep.

The most frequent coexisting anatomic heart conditions in the forty-one cases of syphilitic aortitis were aortic insufficiency, enlargement of the heart, mitral insufficiency, chronic myocardial disease, cardiac hypertrophy, general arteriosclerosis, and mitral stenosis.

The most frequent abnormal physiological heart conditions found to coexist with syphilitic aortitis were aortic incompetency, hypertension, mitral incompetency, and congestive heart failure.

SYPHILITIC AORTIC INSUFFICIENCY

Of seventy-one cases of aortic insufficiency it was found that forty-six were of syphilitic origin. Thirty of the forty-six cases had coexisting syphilitic aortitis.

Of the forty-six cases of syphilitic aortic insufficiency twenty-seven were in white patients and nineteen were in colored patients. Accordingly, the incidence of syphilitic aortic insufficiency was 17 per cent in the colored group while in the white group the incidence was approximately 7 per cent. This incidence was based upon 392 white patients and 108 colored patients. Eighty per cent of the patients with syphilitic aortic insufficiency gave evidence of a positive serology.

The most frequent coexisting cardiovascular conditions in the group of forty-six cases of syphilitic aortic insufficiency were aortitis with dilatation, mitral insufficiency, enlargement of the heart, hypertrophy of the heart, chronic myocardial disease, arteriosclerosis, and aortitis without dilatation.

The most frequent coexisting physiological heart conditions in forty-one cases of syphilitic aortic insufficiency were aortic incompetency, mitral incompetency, hypertension, and congestive heart failure.

In a study of the coexisting valvular lesions in a group of forty-six cases of syphilitic aortic insufficiency, it was found that twenty-four of the number had aortic insufficiency without any coexisting valvular disease. Sixteen of the patients gave evidence of aortic insufficiency and mitral insufficiency; six patients had various valvular lesions in combination with aortic insufficiency.

A study of the age at the time of inception of syphilitic aortic insufficiency among thirty-seven cases of the group showed that the average age at the time of inception was thirty-four years. A study of the duration of syphilitic aortic insufficiency indicates that among the twenty-five living patients the average duration from the date of inception of heart disease to the date of this study was 7.7 years. Among the deceased patients the average duration was 5.2 years.

SYPHILITIC ANEURYSM

Of the group of 433 patients, five gave evidence of syphilitic aneurysm. Of this number three were cases of aneurysm of the ascending aorta; one case showed the presence of aneurysm of the ascending and transverse portions of the aorta; and one patient gave evidence of aneurysm of the ascending, transverse and descending portions of the aorta.

SUMMARY AND CONCLUSIONS

1. Forty-one or 9.5 per cent of the group of 433 cardiac patients showed the presence of syphilitic aortitis. Of this number, twenty-eight were white patients, an incidence of 7.1 per cent; and thirteen were colored patients, an incidence of 12 per cent. A study of the serological findings in the group of cases of syphilitic aortitis showed that 75.6 per cent gave evidence of a positive Wassermann test.

Of the forty-one cases of syphilitic aortitis, twenty-eight or 68.3 per cent showed the presence of dilatation and thirteen or 31.7 per cent were without dilatation.

The average age at the time of inception of syphilitic aortitis was 33.6 years; the youngest was twenty years of age while the oldest was sixty-three years of age. Among eighteen living cases of syphilitic aortitis the average duration from the date of inception to the date of this study was 8.6 years; among eleven deceased patients the average duration was 5.2 years.

The most frequent clinical symptoms and signs of syphilitic aortitis were dyspnea, palpitation, precordial pain, fatigue, and cough.

The most frequent coexisting anatomic heart conditions in syphilitic aortitis were aortic insufficiency, enlargement of the heart, mitral insufficiency, chronic myocardial disease, and cardiac hypertrophy. The most frequent abnormal physiological heart conditions coexisting with syphilitic aortitis were aortic incompetency, hypertension, mitral incompetency, and congestive heart failure.

2. Of the group of 433 patients it was found that seventy-one gave evidence of aortic insufficiency; of the latter forty-six were cases of syphilitic aortic insufficiency. Thirty of the forty-six cases had coexisting syphilitic aortitis. Of the forty-six cases of syphilitic aortic insufficiency, twenty-seven were in white patients, an incidence of 7 per cent; and nineteen were in colored patients, an incidence of 17 per cent. Eighty per cent of the patients with syphilitic aortic insufficiency gave evidence of a positive serology.

Of the group of forty-six cases of syphilitic aortic insufficiency it was found that twenty-four had no coexisting cardiac valvular lesions and sixteen patients had a combination of aortic insufficiency and mitral insufficiency.

The average age at the time of the inception of syphilitic aortic insufficiency was thirty-four years. The average duration of aortic insufficiency in the living cases was 7.7 years, and in the deceased cases 5.2 years.

3. Among the cases of syphilitic heart disease five gave evidence of syphilitic aneurysm of the aorta; three were in the ascending aorta; one was in the ascending and transverse portions of the aorta; and one was in the ascending, transverse, and descending portions of the aorta.

It is desired to acknowledge the technical assistance rendered in this study by A. Bambery, Assistant Statistician, and O. M. Allen, Research Assistant, of the Medical and Hospital Service. It is also desired to acknowledge the helpful suggestions made by Dr. Louis N. Katz, physiologist and Director of Cardiovascular Research of the Nelson Morris Research Institute, Chicago, Illinois.

ACCOMMODATIONS FOR DRUG ADDICTS AND CONVICTS

The dedicatory exercises of the Federal Government plant for the segregation and rehabilitation of narcotic addicts were conducted May 25.

This institution is located on eleven acres in the center of a one thousand acre farm tract, seven miles west of Lexington, Kentucky. The buildings are described as having some of the features of hospital and prison with all of the facilities of a small city. The plan is for a self-contained institution with facilities for all varieties of farm activities, a sewerage system and railroad sidings.

The dedicatory address was delivered by Surgeon General Cumming.

Patients were accepted as of May 29 and by July 1 the number will probably total at least three hundred. The capacity is about fourteen hundred inmates. This institution is for persons convicted of violation of Federal laws, offenders on probation, and voluntary patients. The annual operating cost of this plant will be about seven hundred and fifty thousand dollars.

A similar institution is being erected at Fort Worth, Texas.

APPLICATIONS FOR PREPAID HOSPITALIZATION

It is reported that thirty thousand persons have applied for the three-cents-a-day prepaid hospital service in and about New York City under the provision for twenty-one days' care.

Homer Wickenden, Secretary of the Associated Hospital Service, reports that gifts amounting to thirty thousand dollars toward organization and operating expenses have been received. The Commonwealth Fund made one grant of twenty-five thousand dollars and the Josiah Macy, Jr., Foundation gave five thousand dollars. There now seem to be ample funds to put the plan into operation.

This service is not a money making proposition for the hospitals, but is regarded as a public service. The coördinating council of the Five County Medical Societies has approved this plan. The only criticism of this project has come from some x-ray practitioners who feel that they should be allowed to collect a separate fee.

SUMMARY OF MORTALITY FROM AUTOMOBILE ACCIDENTS

The Bureau of the Census announces that during the four weeks ending May 11, 1935, 86 large cities in the United States reported 654 deaths from automobile accidents. This number (654) compares with 604 deaths during the four weeks ending May 12, 1934. Most of these deaths were the result of accidents which occurred within the corporate limits of the city, although some accidents occurred outside of the city limits.

CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL

ANTE MORTEM AND POST MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

EDITED BY RICHARD C. CABOT, M.D.

CASE 21231

PRESENTATION OF CASE

A fifty-three year old Irish-American building superintendent entered complaining of breathlessness.

During the past year the patient noticed shortness of breath, at first after heavy exertion but more recently even after the slightest exertion. This symptom was not accompanied by either palpitation or precordial pain. During the past four months he noticed the onset of midepigastric "discomfort and fullness," appearing about ten to fifteen minutes after meals and lasting about half an hour unless relieved by belching, flatus or induced vomiting. At first this discomfort occurred only occasionally but more recently it followed almost every meal. Approximately six weeks before entry he developed cough, without coryza or sore throat, which was more severe at night. In the morning he raised thin but later thick, yellowish, tenacious sputum. The cough was occasionally associated with substernal pain.

One month before admission, after drinking a quart of cold milk, he suddenly experienced a violent, steady, sharp stabbing pain in the lower abdomen radiating from one side to the other and up to the umbilicus. He was able to return to his home, where he went to bed. The pain finally let up in the course of about five hours. This attack was not associated with diarrhea, constipation, nausea, vomiting, chills or fever. He remained at home for three days during which time he was weak and his abdomen felt sore. He returned to work in this weak condition. Three weeks before admission he noticed for the first time edema of his ankles which had persisted. He also noted an aching pain in his right shoulder blade when he lay on it for a long time. The pain disappeared, however, upon changing position. Two days later, following exposure to a heavy snow storm for two and a half hours, he became very cold and arrived home with a shaking chill. There was no sweating or fever but he remained in bed for two days. Since that time he worked only four full days, the rest of the time he either worked half days or stayed at home all day. Thirty-six hours before admission, at 1:00 a.m., he awoke and found himself markedly out of breath, "as if he had just run a race," and sweating profusely. He was very apprehensive and got up and sat in a chair. In about five minutes he felt somewhat relieved although he was still out of breath. He did not wheeze and had no pain or palpitation. There was no nausea or vomiting. He returned to bed and was able to pass the night propped up with six pillows. The following day he continued to be somewhat dyspneic, had some epigastric discomfort, but was able to move about the house. The following morning he entered the Emergency Ward.

He had been married twenty-five years and had three children, all living and well. There was no history of miscarriages or stillbirths. He had had a chancre followed by a rash thirty-two years before entry. He received antisyphilitic treatment by his physician for seven years, following which his blood tests were said to have been negative. He was refused life insurance nine years before admission because of a heart murmur. There was no history of rheumatic fever, chorea or hypertension.

Physical examination showed a thin, elderly, pale man in no acute distress. His retinal arteries were slightly tortuous. There were small perforations in the midline of the soft palate and a larger perforation more posterior and to the left. On examination the lungs showed dullness, diminished breath sounds, tactile fremitus and spoken voice over the left base with a narrow band of bronchovesicular breathing and crackling râles just above it. The heart was markedly enlarged both to the right and left. The left border of dullness was in the axillary line, in the seventh intercostal space. The right border of dullness was 6 centimeters from the midsternal line. The rhythm was bigeminal, with alternating pulse and occasional premature beats. Systolic and questionable diastolic thrills were felt all over the heart, both at the apex and base. The sounds were poor and nearly obscured by murmurs heard everywhere. At the apex, aortic area and base of sternum there were blowing systolic and soft diastolic murmurs. No distinction could be made between these various murmurs and it was felt that they were the same murmurs transmitted all over the heart. There was apparently no point where they were heard the loudest. In addition there were at the apex to-and-fro friction-like sounds which were more rapid than the heart beat. The blood pressure was 106/52. The abdomen was slightly protuberant with the liver extending as far down as the umbilicus. The edge was sharp, soft and smooth. There was moderate edema of the lower legs. The neck veins were full but showed no retrograde filling in the upright position.

The temperature was 102°, the pulse 115. The respirations were 28.

Examination of the blood showed a red cell

count of 3,950,000, with a hemoglobin of 90 per cent. The white cell count was 21,000, 90 per cent polymorphonuclears.

He rapidly went downhill and died twelve hours after admission.

Differential Diagnosis

Dr. Howard B. Sprague: I should also like to be orthodox first and then make whatever brilliant leaps may seem to be advisable. But certainly there are some statements in the history that are not clear and they will have to be sidestepped or left without explanation that is satisfactory to me.

The thing that impresses me is that a man of fifty-three who is known to have had a heart murmur for nine years has symptoms of congestive failure lasting only about a year. They begin with his breathlessness and his nocturnal cough, then his epigastric discomfort after meals, his substernal pain, later edema and one attack at least of paroxysmal dyspnea at night. The points which I cannot explain very well are: (1) The attack of pain in the abdomen after drinking cold milk. Perhaps there is no relationship between the cold milk and the pain. Perhaps there was minor abdominal embolism, or possibly it might have been an attack of aortic pain in the abdomen. (2) The statement in the physical examination "the rhythm was bigeminal, with alternating pulse and occasional premature beats." One is wrong; either the pulse was bigeminal or alternating. If it was bigeminal it was due to pseudoalternation, because pulsus alternans is not determined by the rhythm of the heart but by the alternating strength of the beats of the heart with normal rhythm. If it was bigeminal it would be due to a premature beat every other beat. That is not clear. (3) I should like to know about the friction like sounds at the apex which were more rapid than the heart beat. Of course if you confine the term, "heart beat" to the impulse of the heart then perhaps the friction sounds were twice as rapid as the heart beat occurring in both systole and diastole. I do not know what else would add to the speed of the heart beat, as far as friction sounds are concerned, except respiratory friction in addition.

It seems to me that the patient has evidence very suggestive of luetic aortitis; his age, the rather rapid downhill course and the evidence of left ventricular failure. At least we are impressed with the fact that it is a big heart, particularly in the region of the left ventricle and that the murmurs were heard all over the heart. I think that in any case with aortic regurgitation systolic and diastolic murmurs are heard all over the heart more frequently than are the murmurs in mitral disease; also, in mitral disease when the diastolic murmurs become loud the systolic murmur is apt to recede. There is no history of rheumatic disease. The blood pressure was only 106/52, somewhat low; possibly the systolic has come down with congestive failure.

Certainly we know that the man did have lues. If it is true that he was treated directly after he acquired lues and if it is also true that he was autopsied this year, a late case, he must have acquired lues about 1903. If he was treated directly after that—he was treated for seven years—that would make it 1910; and it was not until December 1910 that salvarsan came on the market. Perhaps, then, he was not adequately treated so far as the development of later visceral lues is concerned. He had a perforation in the palate which I am told in the absence of malignant disease or tuberculosis is practically pathognomonic of syphilis.

What else could he have if it is not luetic aortitis? Could this be rheumatic heart disease? He had a murmur for a long time, at least known for nine years. On the other hand, it is very difficult I think to know how long the murmur of syphilitic aortic regurgitation is present in a series of cases because these patients come to the physician when symptoms appear, with a rapid downhill progress, and very often they have had no previous examination for a great many years. It only happened in this case that the murmur was heard because he was examined for life insurance. It might have been just a "life insurance" murmur and perhaps of no importance but we are justified in being a little suspicious that he did have some heart condition at that time. Rheumatic heart disease with pure involvement of the aortic valves is relatively rare. Failure of the heart with normal rhythm, that is in the absence of auricular fibrillation, is rare in rheumatic heart disease. Did he have aortic stenosis and regurgitation? He had apparently systolic and diastolic thrills which were felt all over the heart at the apex and base. That is certainly very helpful information as far as diagnosing the lesion is concerned but I think that we have no clear evidence that he had calcareous aortic stenosis. I would like to know how big his aorta was. Did he have any x-rays?

Dr. Tracy B. Mallory: No.

Dr. Sprague: In the differential diagnosis of aortic lues the size of the aorta by x-ray is a very important point. If it is small it would be much more against the diagnosis of aortitis than if it were large. If it were large, however, it could be a rheumatic process with aortic regurgitation.

Was there a bacterial involvement near the end? He had some fever but nothing else to support that diagnosis. Could there have been a congenital heart which would cause this? The only thing would be patent ductus arteriosus which is a condition that has been known to have been tolerated well into old age. It gives a loud heart with continuous murmurs, but it seems to me a far cry. Can there have been

some strange process in the heart which made these murmurs so non-diagnostic, such as ruptured septum, or something of that sort, of either luetic or sclerotic origin. Did he have pericarditis? We have the statement about the friction-like sounds and some fever. He may show some terminal pericardial involvement. But if this is not a case of syphilitic aortitis then I shall continue to miss the diagnosis with this amount of information.

Clinical Discussion

Dr. Mallory: Dr. White, have you any suggestions?

Dr. P. D. White: The matter of the attack of abdominal pain one month before admission is interesting, and then the severe attack just before he came in.

If he had an aortitis there is the possibility of aneurysm of the thoracic and lower abdominal aorta which he had some time, with rupture and sudden death.

Dr. J. L. Ward: I am the one whose physical examination is being "taken for a ride" but to my mind it was just as bizarre as the description states and I cannot add much more information than the description gives—it was bizarre.

Clinical Diagnoses

Luetic heart disease with congestive failure.
Luetic aortitis.
Aortic regurgitation.
Pulsus alternans.
Bigeminy.
Lues.

Dr. Howard B. Sprague's Diagnoses

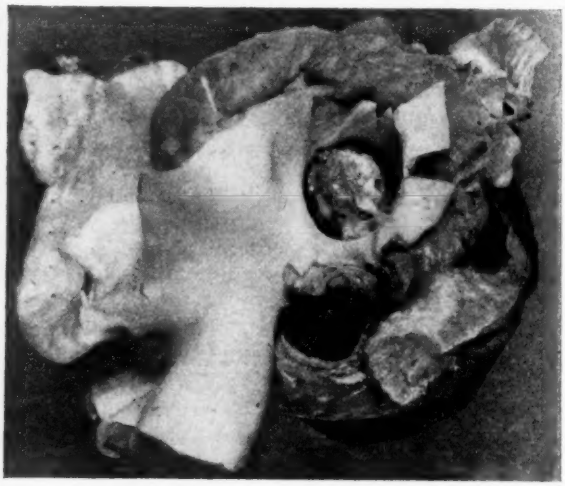
Luetic aortitis with aortic regurgitation and congestive failure.
Aortic stenosis?
Terminal pericarditis?

Anatomic Diagnoses

Mycotic aneurysm of the base of the aorta and heart with rupture.
Hemopericardium.
Aortic stenosis, calcareous.
Endocarditis, subacute bacterial, aortic.
Chronic passive congestion.
Perforation of palate.

Pathologic Discussion

Dr. Mallory: I think it is quite reasonable that the physical findings should have been bizarre because the anatomical findings are. If I had tried, I could not have laid a better trap for Dr. Sprague. He certainly made the only logical diagnosis. However, the man did not have luetic heart disease. He had the senile type of calcified aortic stenosis with a perfectly negative mitral valve. People with that type of aortic stenosis do not ordinarily die so suddenly with as short a period of decompensation as this man did. The reason for his sudden death was an unusual one. Besides the calcified masses which made up the great majority of the aortic valve there were acute fresh vegetations on the remains of the leaflets and to one side of the valve, in the sinus of Valsalva were further vegetations. When we first opened the pericardium we found it completely filled with blood and we thought we had a dissecting aneurysm or possibly a ruptured infarct of the heart. But the aorta was free from an aneurysm and there was no infarct. It was only after considerable toil that we unearthed the difficulty.



The picture shows the almost completely occluded aortic valve, in fact at the angle it was taken no lumen at all is visible. The calcified masses appear white and smooth whereas the fresh vegetations can be clearly made out as shaggy grayish tabs and warts. The perfect smoothness and complete freedom from atheroma of the ascending aorta are very characteristic of cases of calcareous aortic stenosis. Directly below the valve lies an aneurysm, appearing in the picture as a black hole. Its clearly visible outer wall is made up of the musculature of the base of the right ventricle. Its medial wall which was formed by the pulmonary artery is not visible since the aorta has fallen back over it. The second apparent cavity to the right of the aortic valve is an artificial opening into the auricular appendage made at the time of autopsy.

Dr. White: Had we been able to examine the patient a month before we could have made a diagnosis of aortic stenosis.

Dr. Sprague: Any explanation for the abdominal attack, was that embolic?

Dr. Mallory: There is nothing to explain that.

CASE 21232

Presentation of Case

First Admission. A thirty-five year old divorced American woman entered complaining of "kidney trouble".

Three years before admission she noticed a gradual loss of appetite and weight. Six weeks later, while riding on a train, she received an injury to her back following which a swelling appeared over the left kidney region. She entered a local hospital where approximately one quart of pus was removed from her left kidney. She was discharged three weeks after admission with her wound still draining. Two months later she began having pain in her right side which was associated with the drawing up of her right leg. One month later the right kidney was incised and drained. During the following year an abscess developed in the right groin which drained spontaneously and following which she was able to straighten her leg. Both kidney wounds had been draining since operation. She had had pyuria for the past two years but no hematuria, frequency or nocturia. There was no history of shortness of breath or chest pain. Before operation she had had a history of night sweats but none since. Her weight before the onset of the present illness was 142 pounds. Following her kidney operations her weight went down to 75 pounds but since then had risen to 115. At the time of admission, however, she weighed approximately 90 pounds.

There was no family history of tuberculosis.

She was married sixteen years before admission. She had one child fifteen years of age who was living and well.

Her catamenial history had been normal until three and a half years before admission at which time her menstrual periods had ceased.

Physical examination showed a fairly well developed but very poorly nourished woman with evident weight loss. There were two draining nephrostomy wounds and a draining sinus in the right groin. The veins over the chest, abdomen and thighs were dilated. The lungs were clear throughout. The heart was not enlarged. A loud blowing systolic murmur was heard over the entire precordium. The liver was tremendously enlarged, almost reaching the symphysis. The spleen was also enlarged. There was a small hemorrhoidal varix.

The temperature was 99°, the pulse 90. The respirations were 20.

The urine was cloudy and showed a specific gravity of 1.030 to 1.040, a large trace of albumin and a sediment which was loaded with white blood cells. The red cell count of the blood was 3,180,000, with a hemoglobin of 40 per cent. The non-protein nitrogen of the blood was 27 milligrams. A phenolsulphonephthalein test showed only 15 per cent excretion at the end of two hours. The serum calcium of the blood was 8.05 milligrams per cent, the serum phosphorus 5.00. The CO_2 combining power was 44.8 per cent. The plasma protein was 7.1 per cent. A Hinton test was negative.

X-ray examination showed that the kidney outlines were indistinct on both sides. On the right there was a large branching calculus in the region of the kidney pelvis. On the left there were at least two large calculi in the region of the pelvis and one in the cortex. After the administration of dye a second pelvis appeared on the left side well above the area in which the large stones appeared. The appearance suggested a double kidney with a Y-shaped pelvis. The bones of the spine and pelvis were not remarkable. Examination of the chest showed slight prominent hilar shadows but no areas of consolidation or infiltration. The diaphragm was slightly elevated but smooth in outline.

Cystoscopic examination on the seventh day revealed three ureteral orifices into the bladder.

On the seventh day she was given a transfusion of 600 cubic centimeters of whole blood. Five days later a right nephrectomy was performed. She did well postoperatively, receiving two transfusions, each of 500 cubic centimeters of whole blood, on the ninth and fourteenth postoperative days. The drainage from the right side ceased. She was discharged to a nursing home five weeks after admission.

Second Admission, five months later.

During this period she had remained in the convalescent home and had gained 17 pounds in weight. She voided about every four hours. There was no burning, cloudy urine or hematuria. The old left nephrostomy still drained constantly. The discharge varied from clear serum to thick, purulent, occasionally bloody material. Three weeks before this entry she noticed a swelling approximately 4 centimeters in diameter on her left side between the anterior and posterior iliac spines. Heat was applied and this apparent abscess opened spontaneously. She had no fever. The sinus drained freely until about five days before admission. Four days before admission the upper and lower sinuses began to drain less freely. The temperature rose to 104.5°. Heat was again applied and when drainage had become adequate her condition improved a great deal. However, it was decided to have her return to the hospital.

Physical examination was similar to that of the previous admission except that her liver at this time was smaller, extending down to the right anterior superior spine, in the midline to one centimeter below the umbilicus, and on the left as far as the midclavicular line where it disappeared under the costal margin. There was a slight yellowish tinge to the sclerae. There were two draining sinuses in the left kidney re-

gion. Her weight was 105 pounds. The blood pressure was 115/70.

The temperature was 100.4°, the pulse 86. The respirations were 26.

Laboratory findings of the urine and blood were similar to those of her previous admission. The nonprotein nitrogen of the blood was 35 milligrams. A phenolsulphonephthalein test showed 20 per cent excretion at the end of two hours.

An intravenous pyelogram showed a large shadow of the left kidney, in the lower pole of which were two small and three large areas of calcification apparently lying within the calices. There was no filling within the lower part of the kidney. The upper part of the kidney showed markedly dilated calices. The secretion of the dye was somewhat retarded. On the eighth day, following a transfusion of 500 cubic centimeters of whole blood, a left heminephrectomy was performed.

She had a fairly stormy postoperative course. She developed edema of her ankles. The nonprotein nitrogen of the blood was 76 milligrams. The serum protein was 5 per cent. On the fourth postoperative day she was given 600 cubic centimeters of whole blood. Her wound healed fairly well and she was finally discharged to a convalescent home approximately one month after entry.

Third Admission, three days later. She was obviously extremely sick, breathing fairly rapidly and deeply. Her urine output for the past twenty-four hours had been only one ounce. She was given intravenous acacia in 1500 cubic centimeters of 5 per cent glucose followed later by a transfusion of 600 cubic centimeters of whole blood. She continued to be anuric in spite of further intravenous glucose, rapidly failed and died the day following admission.

Differential Diagnosis

Dr. Walter Bauer: "She entered a local hospital where approximately one quart of pus was removed from her left kidney." Up to that point I do not see how we can say whether we are dealing with a perinephric abscess or a pyonephrosis.

"One month later the right kidney was incised and drained." So that she evidently had the same state of affairs on the two sides. I have not enough information up to this point to state just what is going on, whether we are dealing with a bilateral pyonephrosis or with an individual who had bilateral perinephric abscesses. I should think the latter would be unlikely. Furthermore, she continued to have a draining sinus on the side that was operated on first.

She evidently had a psoas abscess in addition. I cannot quite understand why. She evidently developed it before the right kidney was drained. Just where it originated, I do not know. If we are going to assume that she suffered from bilateral pyonephrosis I cannot understand why she had a psoas abscess on the one side.

I presume some of this information is given us to help rule in or rule out tuberculosis, but I do not see that it helps either way. The surprising thing is that this woman was able to be up and about with a large collection of pus, first on one side and then on the other, without ever having had chills, fever and the like. If she did have such symptoms there is nothing in the history to tell one so.

Once we have seen the patient we have evidence that the kidneys were drained and not a perinephric abscess.

The enlargement of the liver and spleen makes us wonder whether we are dealing now with a complicating amyloid disease in an individual who has had a purulent infection for the best part of three years.

The laboratory findings do not quite fit together. It is a little surprising that one would have acidosis due to kidney failure sufficiently great to reduce the CO_2 combining power to 44 and yet have a normal nonprotein nitrogen and no greater elevation of the serum phosphorus than we have in this instance. She has a good specific gravity and yet a very poor phenolsulphonephthalein output, with a normal nonprotein nitrogen; all one can say is that her kidneys were evidently functioning sufficiently well to clear her blood and maintain a normal blood chemistry so far as nonprotein nitrogenous products go.

X-ray Interpretation

Dr. George W. Holmes: This is a plain film and shows the large branching calculus as described in the report. There are two small shadows here which might be outside the kidney pelvis in the kidney substance, but I would not be certain about that. It would be quite an important diagnostic point if we could show a calcified mass in the cortex of the kidney. It would be more indicative of tuberculosis. I do not see any particular change in the bone.

This is after the intravenous dye. You see here the shadow of the extra pelvis and part of the ureters. There is definite evidence of bifid pelvis. These shadows out toward the cortex are still present. The outlines of the kidneys often show much better after the injection of the intravenous dyes than they do before, but I still cannot make them out well enough to say anything definite about their shape. This is a more localized film made in an attempt to show the kidney outline. I think you can see here a rather large shadow like a fused kidney. The film taken of the chest shows slight elevation of the diaphragm; nothing definite. There is no evidence of tuberculosis.

Differential Diagnosis Continued

Dr. Bauer: So that up to this point all we can say is that we are dealing with an individual who has bilateral renal calculi probably secondary to renal infection, a bilateral pyelonephritis probably being the forerunner of these stones. The fact that kidney stones occur so rarely in renal tuberculosis would seem to rule out tuberculosis as the cause of the original kidney infection. She was cystoscoped on the seventh day and was found to have three ureteral orifices. Therefore, we know that she has a bifid pelvis on the left side and two ureters which enter the bladder independent of one another.

Nothing is said about the spleen at this second examination.

She evidently still had a pyuria.

"On the eighth day, ... a left heminephrectomy was performed." I suppose this operation was performed because the evidence obtained from the retrograde pyelogram revealed that the mischief lay in the lower kidney pelvis. I presume it was hoped that she had sufficiently good kidney tissue in the remaining upper half of the kidney to enable them to do a heminephrectomy and get away with it. I should think, to say the least, that it was a most courageous undertaking.

If this nonprotein nitrogen of 76 was not immediately postoperative, we already have evidence that the kidney tissue which remained was not adequate to care for her.

"On the first day of the third admission she was given 600 cubic centimeters of whole blood," evidently in the hope that it would be of some help so far as the anuria was concerned. However she continued anuric despite further intravenous glucose and died the following day. From the description of her rapid, deep breathing one might think she had a final intercurrent infection such as a bronchopneumonia.

To sum up, I should think that we were probably dealing with an individual who originally had had bilateral pyelonephritis as a result of which she developed bilateral kidney stones and subsequently bilateral pyonephrosis. The likelihood of a tuberculous origin is quite remote. Since she had had an infection of three years' duration and subsequently developed enlarged liver and spleen, I should think the most reasonable interpretation is that she had a complicating amyloid disease. This amyloid disease may have been so extensive that it involved the remaining left kidney in addition to the liver and spleen. If so we have one adequate reason why the genito-urinary surgeon did not have better luck with the heminephrectomy. The remaining kidney tissue probably functioned very poorly. I should think that she died of uremia with probably a complicating bronchopneumonia.

Clinical Discussion

Dr. George G. Smith: This was a woman with a very fine fighting spirit, otherwise she would not have gone through what she did go through. She had had a bilateral nephrostomy done three years previously and I do not know how long she carried her nephrostomy tubes. They evidently were taken out before the infection in the kidneys had entirely cleared up and as a result infection in her right kidney and in the lower half of the left kidney persisted, which was a factor undoubtedly in the formation of these bilateral stones. It would appear that when she had the nephrostomy done on the left kidney she entered the hospital where it was done more or less as an emergency with a large swelling on that side and the accumulation of a pint or so of pus. The surgeon undoubtedly just opened the abscess, which probably was an abscess of the lower half of the left kidney, and put in a tube. At the operation which I did, the heminephrectomy, there was no evidence that the upper portion of the kidney had ever been drained. When she came in the preceding fall Dr. Colby did a right nephrectomy on her and she improved a good deal after that operation but continued to drain pus from the sinuses on the left side. Her condition improved enough so that it seemed as though it was advisable to remove the lower half of the left kidney. In doing this we were not entirely guided by hope, as Dr. Bauer would imply, but we did have fairly definite evidence that the only kidney function that she had was delivered by the upper half of the left kidney. The intravenous pyelogram showed no function whatever from the lower half of the left kidney but did show a pretty good function from the upper half of the left kidney and there was no evidence of obstruction to drainage, no evidence of stone.

In the operation on this left kidney we found that the lower half of the kidney was just a mass of disintegrated tissue. We liberated about two ounces of pus which lay in a cavity surrounded by fragments of kidney tissue in the middle of which these stones were floating. The stones were removed. There were just a few pieces of kidney tissue. They could not possibly have had any secretory function. They were separated from the upper half, which appeared to be solid and of quite good size. I did not free it up entirely. I did just as little as I could in order to get rid of the suppurating lower half and the stones; but my impression was that the upper part of the kidney was in good shape.

The patient did very well after operation and the wound healed well. She got up and walked around the ward; I do not remember just when that nonprotein nitrogen of 76 was, but my impression is that it was just after operation but

then came down again. At any rate she left the hospital in better condition than when she came in.

I did not see her when she came back with the terminal condition but I do not think that she had insufficient kidney tissue left to support life. She went to pieces all of a sudden. If she had had a chronic condition there that was responsible for death, she would have gone downhill gradually instead of having this sudden collapse. I think we probably will find that she had acute infection, probably septicemia. Whether she had anything in the lungs, I do not know.

DR. MALLORY: The renal function was done about one week before she left the hospital, following nephrectomy, and it was perhaps a week postoperative.

CLINICAL DIAGNOSES

Uremia.
Bilateral nephrolithiasis.
Pyelitis.
Double left kidney.
Amyloidosis.

DR. WALTER BAUER'S DIAGNOSES

Pyonephrosis, bilateral.
Nephrolithiasis, bilateral.
Amyloidosis.
Uremia.

ANATOMIC DIAGNOSES

Pyonephrosis, bilateral.
Nephrolithiasis, bilateral.
Double kidney and ureter, left.
Operative wounds: right nephrectomy, left heminephrectomy and nephrostomy.
Perforation of descending colon.
Peritonitis, general.
Amyloidosis—liver, spleen, kidney and adrenals.
Pulmonary atelectasis.

PATHOLOGIC DISCUSSION

DR. MALLORY: Dr. Smith was right in thinking that something suddenly happened to this patient. There is absolutely nothing in the clinical record to give any indication of what it was. She developed a general peritonitis and at autopsy we found a perforation in a portion of the descending colon in apposition with the nephrectomy wound. There must have been persistent infection which eroded through the peritoneum and the colon, finally producing a large enough hole for the escape of fecal contents and the development of a generalized peritonitis. With the exception of that terminal event, everything was exactly as predicted. She had a very severe generalized amyloid disease, the most marked case we have had here in ten years. The liver was three times the normal size, the spleen weighed over 800 grams. The remaining portion of the left kidney also showed extensive amyloid infiltration, as Dr. Bauer predicted. From the appearance of that remaining kidney tissue I think it would be impossible to say whether there was renal insufficiency, though she certainly could have had only a small amount of renal reserve. The apparent volume of the remaining kidney tissue was certainly misleading. The kidney had evidently been a double one and we found the two separate ureters without difficulty. The lungs were entirely negative.

DR. JOSEPH S. BARR: I saw this woman on her first or second admission at Dr. Colby's request and she presented what I think were most of the clinical signs of amyloid disease. She had had chronic sepsis for a long period of time. She had bronzing of the skin, and I wondered if the adrenals showed anything.

DR. MALLORY: They were almost completely replaced by amyloid infiltration.

DR. BARR: I think that is the explanation. She had a large liver and spleen, of course. She had some hemorrhoids and dilated veins of the abdomen and thorax which I presume represented the collateral circulation associated with portal obstruction. Most of the patients I have seen have had terminal ascites of the abdomen and edema of the legs. I do not know whether that is due to the portal obstruction or to kidney involvement or some elements of both. At the time I saw her she had neither ascites nor edema of the legs. I do not believe there is any treatment for this complication except adequate drainage and an attempt to clear up the sinus. Whitbeck has recommended the use of liver extract and states that with this treatment the liver has decreased in size. I wonder if that is not due to fibrosis rather than the cure of the disease.

DR. BAUER: We must also remember that we occasionally see amyloid disease without sepsis or suppurative disease.

DR. MALLORY: In a hospital of this sort where tuberculosis is ruled out, that is our actual experience. In the majority of our cases we have been unable to determine the etiology.

The New England

Journal of Medicine

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WHITHER BOSTON?

THE alarming increases of the tax-rate in Boston in recent years and the continuance of the policy of free spending and of huge borrowing for current expenses, foreshadow inevitable drastic retrenchment which cannot be much longer postponed.

When retrenchment comes, the Department of Health will be obliged to economize along with other Departments of the City. Fortunately for the public, His Honor the Mayor last year called together a Committee of experts on municipal health administration under the chairmanship of Dr. Wilson G. Smillie*. They were asked to prepare a plan of retrenchment which would provide for considerable savings in cost of operation without seriously curtailing the very important health services rendered by that Department. This Committee performed its function admirably. Its major recommendations, however, have not yet been acted upon and little saving has been made. We believe, nevertheless, that the Mayor was impressed with the value of the Report.

We hope that when the day of reckoning comes or, better still, before that day arrives, the Report of Dr. Smillie's Committee will emerge from its pigeonhole and that its proposals will be put into effect.

If some of the reorganizations proposed by the Committee cannot be made without changes in existing laws, are steps being taken to modify such laws?

*Recommendations of the Committee appointed by the Mayor of Boston to survey the Health Department—March 24, 1934. *New England Journal of Medicine.* Vol. 210; no. 16; pp. 871-873; Apr. 19, 1934.

SUMMER CAMPS

THE Boston Health League continues to demonstrate its varied activities in the interests of improving health conditions by again publishing its pamphlet of standards and equipment for summer camps. This pamphlet, produced by the efforts of the Summer Camp Committee of the Health League, varies from year to year; it is not a stereotyped list of instructions, but each year reviews the situation anew and stresses some particular point that may need emphasis, bringing each year, also, new advice and counsel to the deliberations of the committee.

These standards are offered in order that leaders and others responsible for children in summer camps may have available a guide for measuring, to some extent, equipment and standards. It is recognized that all camps may not meet them in every respect, but it is hoped that they may be useful in helping camps attain certain desirable objectives.

This year's bulletin is particularly complete in its scope, setting standards for equipment as to sleeping quarters, infirmary, and fire fighting; for sanitation; for staff and leadership; for food, and for dining room facilities. As was done last year, the need for rest is emphasized, on the basis that fatigued children cannot derive proper benefit from camp activities, and that over-excited children are also fatigued children. A warning is given against over-keen rivalry in competitive sports, and suitable rest periods are recommended.

Considerable detailed advice is given concerning instruction and safety in swimming and boating, and a physical examination blank is incorporated in the brochure.

The importance of the summer camp is steadily increasing as the number of children who have no other available method of indulging in normal outdoor activities in the forest, in the country and on the water is increasing. This applies not only to the so-called underprivileged classes; countless numbers of children in comfortable economic circumstances are similarly situated. The camp director, whether engaged

in a business enterprise or a philanthropic one, must recognize his or her responsibilities, not only in safeguarding the lives and health of young campers and in affording them facilities for recreation, but also in adding concretely to their educational opportunities.

A QUESTION OF GOOD TASTE

UNDER the heading "Dr. Truesdale Case" the *Boston Herald* has published an editorial in which appear two statements which concern the medical profession and especially the Chairman of the Committee on Ethics and Discipline of the Massachusetts Medical Society.

The first in referring to Dr. Truesdale is, "we realize only too well that some of his ultra-conservative brethren would regard such an effort as damning evidence of his alliance with the unholy press".

The "effort" refers to a defence of Dr. Truesdale. We are only concerned in the wording and sentiment expressed in this editorial. The *Herald* ought to know that the medical profession is not excessively conservative. Its aims and purposes are first and always to promote the welfare of humanity and never to exploit the profession or any of its members. It is persistently and consistently placing before the public its achievements in order that advantage may be taken of the resources of science and art in dealing with disease and it should be recognized that the technic employed is that which is built on accumulated knowledge for which the profession should be credited rather than individuals. Due honor will be accorded to those who have made the larger contributions but should be conferred by the profession in the first instance. History shows that the public has not always shown discrimination in dealing with the standing of physicians. For this reason newspaper publicity as applied to individuals is rightly deplored because of the emotional appeal often displayed and the desire to entertain the public. If dependence could always be placed on unprofessional opinion, the situation would be different.

The second objectionable reference is in the use of the expression "Dr. Cheever's semi-censorious comments . . . seem superfluous."

How an unprofessional opinion on a subject as delicate as that involved in the relations of doctors and the public may be judicially defined by a layman is certainly open to discussion.

The opinion expressed by the Chairman of the Committee on Ethics of the Society was in answer to the request of Dr. Truesdale for a conference at which the whole subject was discussed and the letter of the Chairman was the expression of the committee as a whole and may be regarded as that of the profession which is, we contend, better qualified to establish ideals relating to the behavior of doctors, than even an intelligent layman.

We refrain from any discussion of the actual facts, but we do contend that the statement that the Chairman's so designated "semi-consorious comments are superfluous," is in poor taste.

Even with our high regard for the *Boston Herald*, we are confident that the medical profession will continue to formulate its own ideals of professional conduct.

THIS WEEK'S ISSUE

CONTAINS articles by the following named authors:

PADDOCK, BRACE W.* B.A., M.D. Columbia University College of Physicians and Surgeons 1904. F.A.C.S. Chief of Staff, House of Mercy Hospital, Pittsfield. His subject is "Postgraduate Medical Education." Page 1069. Address: 7 North Street, Pittsfield, Mass.

MONROE, ROBERT T. A.B., M.D. University of Michigan Medical School 1924. Faculty Instructor in Medicine, Harvard Medical School. Associate in Medicine, Peter Bent Brigham Hospital. Physician in Chief, Long Island Hospital. His subject is "Chronic Arthritis in Hyperthyroidism and Myxedema." Page 1074. Address: 721 Huntington Avenue, Boston.

SEGAL, MAURICE S. B.S., M.D. Tufts College Medical School 1932. Teaching Assistant, Department of Physiology, Tufts College Medical School 1932-33. Resident Physician, First and Third Medical Services, Boston City Hospital 1935-36. His subject is "Auricular Fibrillation and Auricular Flutter in the Course of Subacute Bacterial Endocarditis." Page 1077. Address: Boston City Hospital, Boston.

FITCHET, SETH M. B.A., B.P.H., M.D. Harvard University Medical School 1921. F.A.C.S. Visiting Surgeon, Orthopedic Department, Children's Hospital. Assistant in Surgery, Massachusetts General Hospital. Associate Surgeon, New England Baptist Hospital. Consulting Surgeon, Josiah B. Thomas Hospital, Peabody, and Massachusetts Eye and Ear Infirmary. Assistant in Orthopedics, Courses for Graduates, Harvard Medical School. His subject is "The Tilted Pelvis and Scoliosis Treatment: Preventive and Operative." Page 1082. Address: 319 Longwood Avenue, Boston.

DOWNING, J. G. A.B., M.D. Harvard University Medical School 1915. Assistant Professor of Dermatology, Tufts College Medical School. Assistant Dermatologist, Boston City Hospital. Dermatologist, Beth Israel and St. Elizabeth's Hospitals. His subject is "Surgi-

*Died May 22, 1935.

cal Problems of Fungous Origin. Report of a Case of Sporotrichosis in Massachusetts." Page 1085. Address: 520 Commonwealth Avenue, Boston.

MATZ, PHILIP B. See This Week's Issue, page 894, issue of May 9, for record of author. His subject is "A Study of Heart Disease Among Veterans. V. Syphilitic Heart Disease." Page 1087.

The Massachusetts Medical Society

SECTION OF OBSTETRICS AND GYNECOLOGY*

THOMAS ALMY, M.D., *Chairman*, 140 Rock Street, Fall River, Mass.

C. J. KICKHAM, M.D., *Secretary*, 524 Commonwealth Avenue, Boston, Mass.

ETIOLOGY AND TREATMENT OF POSTPARTUM SEPSIS

Despite the substantial progress made in asepsis and antisepsis, there are still existent occasional epidemics of postpartum sepsis, and isolated cases are always to be found in every obstetrical hospital.

It has been proved beyond reasonable doubt that not only are the ordinary pus producing bacilli and cocci present in the vagina of the non-pregnant as well as the pregnant woman, but that there are also virulent organisms found, at times, even the streptococcus hemolyticus. Every time the genital tract is subjected to trauma, there are created numerous portals of entry for the invasion and propagation of pathogenic organisms. It is really a genuine act of charity on the part of Providence that we do not have more sepsis than now seems possible. The answer is partly found in the ever-present resistance on the part of the host, plus the rigorous attention to surgical technique. Postpartum sepsis is sometimes the result of a lighting up of an old supposedly quiescent gonorrheal infection.

The treatment should be directed along two main channels. First, the resistance of the patient should be maintained as high as possible. Regular prenatal examinations every three weeks the first seven months, and every two weeks thereafter. Pregnant women should be urged to abstain from visiting crowded places, meeting halls, theatres, etc., especially during the winter months when we always have with us the upper respiratory infections. At the slightest suggestion of a "cold", the patient should be put to bed until all traces of the infection have disappeared. No sexual intercourse should be indulged in during the last two months of pregnancy.

The longer we live the more we learn that the majority of patients in labor, if left alone, will deliver themselves spontaneously. Watchful waiting should always be the keynote. Generally speaking, no delivery should be attempted until there is full dilatation of the os.

Some clinics have of late years been instilling a 4 per cent aqueous solution of mercurochrome into the vagina as a part of the general preparation of the patient in labor, with a noticeable diminution in postpartum morbidity.

Vaginal examinations fortunately have been replaced by rectal appraisals. It may be suggested here that in doing a rectal examination it is good surgical technique to cover the introitus with a sterile sponge, therefore excluding the possibility of invading the vagina with the thumb.

All attendants in the delivery room should wear masks covering the mouth and nose.

A thorough external preparation with either mercurochrome (the water soluble 4 per cent solution or the acetone alcohol solution) or with picric acid is all that is being used in the majority of clinics to prepare the field for delivery. Avoid forceps as much as possible. Do episiotomies when necessary rather than allow the perineum to tear of its own accord. Repair visible wounds under strict surgical asepsis. Maintain surgical perineal toilet throughout confinement, and especially the first three days.

Postpartum infections fortunately are confined mostly to the genital tract, without invading the blood stream. The treatment should always be conservative: general hygienic and supportive measures. Collections of pus should of course be treated surgically. If a generalized infection does appear, it is the consensus of the present day that conservative treatment gives the patient a better chance of recovery.

*A series of short selected articles by members of the Section will be published weekly.
Comments and questions by subscribers are solicited and will be discussed by members of the Section.

MASSACHUSETTS LEGISLATIVE NOTES

THE CHIROPRACTIC BILL

The *Boston Herald* reports under date of May 28, that the Legislative Committee on Public Health has reported favorably a bill providing for the licensing of chiropractors in Massachusetts, with five dissenting members.

When this matter came before the people of this State on the referendum in 1932, the vote was more than two to one against it.

The question is: Will the Legislature accept the responsibility of enacting this bill after an impressive record of the sentiment of the people of this Commonwealth against the recognition of this cult?

It should be appreciated by the members of the

Committee that chiropractic is apparently a declining cult so far as the number of practitioners and endorsement of the public are concerned. If there proves to be a majority sentiment in the Legislature favoring the passage of this bill, it will demonstrate a lack of knowledge of the great contributions of medical science to the welfare of the race and an absence of appreciation of the illogical theories upon which the theory and practice of chiropractic are based.

The claims of these cultists have been carefully examined by competent persons and have been found to be unsound.

House Bill 717, which provides for the inspection by injured employees of medical reports of insurers, physicians and of hospital records on file with the Department of Industrial Accidents, has been ordered to the third reading in the Senate.

MISCELLANY

AN AWARD TO DR. EDWARD MARTIN

Dr. Edward Martin, Emeritus Professor of Surgery at the University of Pennsylvania, will be awarded the honorary degree of Doctor of Laws by Temple University at its commencement on June 13 in recognition of his services in the field of surgery and public health.

Dr. Martin has been a conspicuous figure in Pennsylvania medical, surgical and public health activities. Born in Philadelphia in 1859, he received his A.B. from Swarthmore in 1878 and his A.M. in 1882. He was graduated in medicine from the University of Pennsylvania in 1883.

Dr. Martin was Director of Public Health in Philadelphia from 1903 to 1905; has been a member of the Board of Education since 1911; and Commissioner of Health, State of Pennsylvania. He was consulting surgeon 5th Army Corps, Spanish-American War; Lieutenant-Colonel, World War; and Colonel, 364th Medical Regiment.

Dr. Martin has many friends in Boston.

CORRESPONDENCE

MEDICAL EXPERT COMPANY

May 25, 1935.

Editor, *New England Journal of Medicine,*

After reading your editorial in the May 23 issue of The *New England Journal of Medicine* entitled "Why Do Physicians Not Testify Against Physicians in Court?", I am sure you would be interested in a resolution which has just been passed by the Connecticut State Medical Society, as follows:

> Whereas, members of the medical profession are habitually called upon to give expert testimony in courts of law in behalf of clients from whom they derive remuneration, and
>
> Whereas, their testimony might easily be biased because of personal or particular interests, thereby giving rise to evil practices, and
>
> Whereas, biased or prejudiced testimony results in conflicting views not wholly based on medical knowledge or theory, and
>
> Whereas, conflicting testimony tends to destroy public confidence in the medical profession, now therefore
>
> Be It Resolved: That a committee of three be appointed to study the subject of medical expert testimony in Connecticut and elsewhere; this committee to confer with the Judicial Council of Connecticut, the State Bar Association and any State Association of persons who habitually are called upon to give expert testimony, and to explore the possibilities of devising a state system whereby experts giving testimony shall be selected and paid by the Court even though other experts appear for either party."

Some years ago an attempt was made to establish what might be called a European system of court appointed and court paid experts which came to naught in Connecticut, largely because there was no opportunity in the law proposed for each side of the controversy to bring in experts of their own. This fault we have avoided in the statement of this resolution.

It will probably be found that the legal profession is individually if not collectively opposed to any such procedure as is contemplated by our resolution, for from the lawyer's point of view, the more controversy the better. However, I was assured by the Chief Justice of the State of Connecticut that such an inquiry and study might be profitable.

I believe that if the professional bodies, other than lawyers, become convinced that this is the way to do it, that enough interest can be obtained from manufacturers' associations, insurance companies and other influential organizations to overcome the objections of the lawyers, if such develop.

Very truly yours,

JAMES R. MILLER, M.D.

179 Allyn Street,
Hartford, Conn.

RECENT DEATHS

GOLDBERG—ELIAS GOLDBERG, M.D., of Brookline, Massachusetts, died May 25.

He formerly lived in Chelsea and Dorchester, and had retired from practice. His death was assumed to have been caused by mental depression resulting from financial reverses.

HEMEON—Frederick Chipman Hemeon, M.D., of 9 Standish Street, Dorchester, died at his home, May 26, 1935. He was born in Liverpool, Nova Scotia, in 1869. His early education was acquired at Acadia College, Wolfville, Nova Scotia, and he graduated from the Jefferson Medical College in 1897.

He practiced for thirty-eight years in Dorchester. His membership in the Massachusetts Medical Society dates from 1912. He was a Fellow of the American Medical Association.

His widow, Mrs. F. C. D. (Shetland) Hemeon, a son, James Russell Hemeon of Trenton, New Jersey, and a daughter, Mrs. Elizabeth H. Speir of Hempstead, Long Island, survive him.

NEWTON—Frank L. Newton, M.D., of 73 Madison Avenue, Newtonville, Mass., and formerly a practitioner in Somerville, died at his home, May 30, 1935. He was born in Truro, April 9, 1857, and graduated from Boston University School of Medicine in 1884. He joined the Massachusetts Medical Society in 1916. He was a former President of the Gynecological and Obstetrical Section of the American Institute of Homeopathy.

His widow, Mrs. Josephine Newton, and two sons, Allison L. Newton and Frank H. Newton, all of Newtonville, survive him.

TALLMAN — Augustus Littlefield Tallman, M.D., of 9 Princeton Street, East Boston, died at his home, May 20, 1934. He was born in Bath, Maine, January 17, 1850, and graduated from the Bowdoin Medical School in 1881. He joined the Massachusetts Medical Society in 1883 and retired in 1932. He was prominent in the Masonic order and interested in the civic affairs of East Boston. A sister, Mrs. Julia T. Trost, of Brooklyn, New York, survives him.

NOTICES

LAWRENCE CANCER CLINIC

Established 1928

Lawrence, Mass.,
June 4, 1935.

To the Physicians of the North Half of Essex County:

Dear Doctor:

The regular Lawrence Cancer Clinic, to be held at Lawrence General Hospital, 1 Garden Street, Lawrence, upon Tuesday, June 18, at 10:00 A.M., will be a Demonstration Clinic with Channing C. Simmons, M.D., of Boston, Surgeon-in-Chief to the Collis P. Huntington Memorial Hospital, and member of the Cancer Commission of Harvard University, Boston, present as consultant. You are invited to accompany any of your patients whom you desire shall have this service, or to send them with a note, and a report will be returned to you. This service is gratis. Your attendance at the Clinic is always welcome.

This Clinic is endorsed by the Committee on Postgraduate Instruction of the Massachusetts Medical Society.

Committee

Roy V. Baketel, M.D.,
Chas. J. Burgess, M.D.,
Fred'k D. McAllister, M.D.,
John J. McArdle, M.D.,
Harry H. Nevers, M.D.,
Thos. V. Uniac, M.D.,
J. Forrest Burnham, M.D., *Chairman.*

UNITED STATES CIVIL SERVICE EXAMINATIONS

The United States Civil Service Commission has announced open competitive examinations as follows:

Medical Technicians

Applications for positions of senior medical technician and medical technician must be on file with the U. S. Civil Service Commission, Washington, D. C., not later than June 24, 1935.

The entrance salary for senior medical technician is $2,000 a year and for medical technician $1,620 a year.

Full information may be obtained from the Secretary of the United States Civil Service Board of Examiners at the post office or customhouse in any city which has a post office of the first or the second class, or from the United States Civil Service Commission, Washington, D. C.

REPORTS AND NOTICES OF MEETINGS

THE SUFFOLK DISTRICT MEDICAL SOCIETY

A meeting of the Suffolk District Medical Society was held at the Children's Hospital on the twenty-fourth of April. Doctor DeNormandie presided. Doctor Frothingham submitted a report concerning the abuse of charity at the Boston City Hospital and it was moved to send a notice to all members of the Society suggesting that they coöperate with the authorities and not send patients to the Boston City Hospital who are able to pay a physician. It was moved to enlarge the scope to include the study of the abuse of charity in other hospitals in Boston.

Doctor Lanman was the first speaker of the evening and presented two cases of exstrophy of the bladder. These cases are rather rare, and at the Children's Hospital they have been treated by transplanting the ureters into the rectosigmoid. It is best to wait until the children are nearly four years old so that they will be able to coöperate in training the rectal sphincter. Many methods have been used, but for the past six years Doctor Lanman has felt that it is necessary to do only one side at a time, so that temporary blocking will not be of any significance. It is not necessary to use a catheter at the site of anastomosis. The transperitoneal route has been used without a single case of peritonitis in any of the twenty-two patients so

far operated upon. The advantage of this method of approach is that the surgeon can see how the ureter lies and avoid any kinking, so that there will be less likelihood of urinary obstruction. The cases are not drained. At a later date the mucous membrane of the bladder is removed because it continues to secrete, may be a source of irritation, and later may lead to carcinoma. The results have been very satisfactory and kidneys have uniformly shown no marked damage, and the patients can go from four to six hours without emptying the rectum. Doctor Colby briefly discussed this presentation, and said that it was used at the Massachusetts General Hospital in cases of carcinoma of the bladder.

The second paper was presented by Doctor Eley on "Hemophilia." Studies have recently been made on the effect of human placental tissue extract on the blood clotting mechanism. It has been found that tissue coagulants have some species of specificity. This extract contains a coagulant and is potent even in high dilutions. One hundred thousandth of a milligram causes a change in the coagulation time. In rabbits intraperitoneal injection of the extract causes a prompt reduction in the coagulation time which lasts from thirty-six to forty-eight hours. In a normal human being five cubic centimeters of the extract given by mouth caused the coagulation time of the venous blood to drop from six and a half to one and a half minutes, and the capillary clotting time to drop from two and a half to one and a half minutes.

This method has been applied in a few cases of hemophilia, and lantern slides were shown demonstrating several cases where the coagulation of the venous blood took from three to three and a half hours, and the patient was given five cubic centimeters of extract followed by a glass of ice water, and both the capillary and venous coagulation times immediately dropped to normal and stayed there from two to six days. Therefore, hemophiliacs vary considerably in the frequency with which they get more extract. Some cases need to have alkaline water administered with the extract, in order to neutralize the acid of the stomach before it is effective. In one case a method has not been found by which the coagulation time can be brought to normal. In one case the extract has been applied locally to a scalp that had been oozing blood for several days and a clot was immediately formed.

Doctor Ladd spoke on the treatment of ulcerative colitis in infants and children. Three cases were shown. The Bargen-Logan bacillus has been isolated in most of these cases of idiopathic ulcerative colitis. Fifteen out of twenty-five have been treated surgically within the past ten years. Four of these are apparently cured, having been well for several years after the closure of a transverse ileostomy, which had been open for two years. Two others have gained weight and are in good condition after one year with an enterostomy. One died of carcinoma of the colon, one of volvulus, one of hemorrhage, and one of multiple perforations. Doctor Ladd stressed the fact that we must treat these cases much earlier than has been done in the past, because many of them will die, if left alone, either of the disease or of its common complications, hemorrhage, perforation, and peritonitis. The structural change in the colon is greater the longer the disease has gone on, and there is progressively less chance of cure. After a reasonable amount of medical treatment has been tried an ileostomy should be done, and then one and a half or two years later, if there is no evidence of disease in the colon, it may be closed. Older children give less favorable prognoses than the younger ones. For two or three weeks following operation there is considerable loss of fluid, and electrolytes through the ileostomy, but after this the stools become less liquid and more formed. Skin irritation is difficult to control around the ileostomy opening for the first month. A mixture of kaolin and oil protects the skin better than most other preparations. No irrigations are used.

The last paper was on "Carbon Tetrachloride Poisoning" and was presented by Doctor Heyl. An infant two and a half years old after having swallowed "Energine" was brought into the hospital. It vomited and was drowsy on entry. It appeared to be normal on physical examination other than its drowsiness, but after twenty-four hours it began to run a fever of one hundred and three degrees. The fever continued, and on the third day there was a sudden severe series of convulsions which required ether, intravenous glucose and calcium to alleviate the condition. The patient was in coma for the next three days; signs of kidney damage became evident and the urinary picture was that of acute nephritis with edema. On the fifth day he became anuric. The liver became enlarged to below the umbilicus, and the blood nonprotein nitrogen reached a high of eighty-eight milligrams per cent on the ninth day and then slowly fell. The patient apparently completely recovered. During his stay in the hospital intensive calcium treatment in amounts of from one to one and a half grams a day were given together with from one to two hundred grams of glucose a day, and a low fat, low protein diet. Adequate catharsis was maintained.

Doctor Heyl discussed briefly the pathological physiology of this type of poisoning. Vomiting and nausea occur almost immediately with hemorrhage into the gastric mucosa. A late series of symptoms occur on the third or fourth day when signs of liver and kidney damage become evident. There is central necrosis of the liver with fatty degeneration which may proceed to acute yellow atrophy with or without acute nephritis, anuria, and a high nonprotein nitrogen. It has been found that a high calcium intake reduces the mortality and morbidity of this type of poisoning. A high protein diet increases the severity. The glucose intake must be maintained. There is a great increase in the guanidine in the blood and the symptoms are similar to those of guanidine poisoning. This substance is

normally taken care of by the liver, and if it is not detoxified it interferes with lactic acid being oxidized to carbon dioxide and water. Therefore, in poisoning by guanidine or carbon tetrachloride there is an increase in the lactic acid content of the blood. The blood sugar is definitely lowered. Calcium injections are needed to keep the sugar at a proper level because apparently the adrenal mechanism necessary to raise the blood sugar does not function if there is not enough available calcium in the blood. Alcoholics are highly sensitive to carbon tetrachloride poisoning.

ESSEX NORTH DISTRICT MEDICAL SOCIETY

The ninety-fifth Annual Meeting of the Essex North District Medical Society was held at the Anna Jaques Hospital in Newburyport, May 15, 1935, with seventy-five present.

The president, Dr. Parr, opened the business meeting at 12:30 P.M., following the ward rounds at 11:30 A.M.

The minutes of the previous meeting were read by the secretary, and approved.

The treasurer's report was read and approved.

In the report for the Committee on Funds, Dr. Sargent reported that the District Society had paid in full the amount for loan from the Permanent Funds, and stated that the money on deposit was $1,754.96.

Dr. Sweetsir, chairman of the nominating committee, reported the following nominations for Society officers for 1935-1936:

President: C. F. Warren, Amesbury.

Vice-President: E. P. Laskey, Haverhill.

Secretary: E. S. Bagnall, Groveland.

Treasurer: E. S. Bagnall, Groveland.

Auditor: A. M. Hubbell, Haverhill.

Censors: R. L. Toppan, Newburyport; J. F. Walch, Lawrence; W. W. Ferrin, Haverhill; A. E. Chesley, Lawrence; P. J. Mullen, Amesbury.

Councilors: R. V. Baketel, Methuen; J. F. Burnham, Lawrence; H. F. Dearborn, Lawrence; A. P. George, Haverhill; T. R. Healy, Newburyport; F. W. Snow, Newburyport; L. T. Stokes, Haverhill; R. L. Toppan, Newburyport; W. D. Walker, Andover.

Nominating Councilor: J. F. Burnham, Lawrence.

Alternate Nominating Councilor: T. R. Healy, Newburyport.

Commissioner of Trials: R. C. Hurd, Newburyport.

Committee on Funds: G. S. Allen, Lawrence; G. B. Sargent, Lawrence; H. Kapp, Haverhill.

Correspondent to *New England Journal of Medicine:* E. S. Bagnall, Groveland.

Delegate to Committee on Public Relations of Massachusetts Medical Society: E. S. Bagnall, Groveland.

It was moved and seconded that the secretary cast one vote for the list as submitted.

In the absence of Dr. Manahan, Dr. Bagnall read for the committee the report on the death of Dr. Lane. It was moved, seconded, and passed that the report be spread on the records and a copy sent to the family.

Dr. A. M. Hubbell read for the committee the report on the death of Dr. Charles E. Durant. It was moved, seconded, and passed that the report be spread on the records, and a copy sent to the family.

Dr. Ferrin read for the Committee the report on the death of Dr. Frank H. Coffin. It was moved, seconded, and passed that the report be spread on the records, and a copy sent to his sister.

Dr. Bagnall, as delegate to the committee on Public Relations of the Massachusetts Medical Society, reported the reorganization of the State Committee.

He then remarked that the District Committee on Public Relations has considered it desirable that liaison groups in each of the centers of population of the district be organized to build up better machinery for the initiation of projects for the mutual benefit of the profession and the public; and the opportunity for the carrying out of policies initiated by the Public Relations Committee of the State Society, or of the District Society. He also remarked that the subcommittee on "Social Legislation and Insurance" of the Massachusetts Society have under way plans to educate lay groups regarding compulsory sickness insurance. This campaign will get under way in the Fall.

Dr. Bagnall moved that the Public Relations Committee of this Society be authorized to select groups in each of the centers of population to be known as the city committees. The purpose of these committees will be to further the mutual interests of the profession and the public in their respective communities, acting coördinately with the Public Relations Committee of the District Society, and through them with the State Committee on Public Relations. The motion was seconded and unanimously passed.

Dr. Snow moved that a committee be appointed by the chair to study the by-laws of this Society and to make such recommendations as may occur to them for possible changes in the by-laws. His motion was seconded and passed unanimously.

Dr. Bagnall called attention to a letter received from the Commissioner of Health, regarding diphtheria immunization. He stated that it is the desire of this and all other public health agencies to promote so far as possible, diphtheria immunization in the offices of the private physicians, hoping that we may some day see the time when it may supplant clinic work without at the same time lessening the number of children actually protected.

Dr. Burnham urged that as many doctors as possible attend the American Medical Association meeting in Atlantic City in June. An outlay of only $60.00 would be needed, including transportation, room, and meals.

After the business meeting, the members adjourned to the dining room.

Dr. Burnham moved that the members pay 75c toward their dinner, the balance to be paid by the Society. This motion was seconded and passed.

After dinner, Dr. Elliott P. Joslin gave a very interesting talk on "Some Highlights in the Management of Diabetes". He opened his remarks by stating that he had had ninety-six dead diabetic doctors whose average age at death was sixty-three, and who had the disease for eight years at the time they died. (This represents fairly accurately the age of death and the duration in years of the disease in the 981 cases of diabetics who died since 1931.) Of the 328 diabetics who died in Boston last year, there was only one who was under fifteen years of age. Dr. Joslin has now 196 diabetic children who have had the disease for ten years and have a life expectancy of twenty more years. Studies of death certificates at the State House revealed that "diabetes" did not appear as a cause of death in 37½ per cent of known diabetes through a six-year period. He stated that there are 3,000,000 people who have or will have diabetes in the country at the present time and that there is a diabetic heredity in about 30,000,000 people in the United States.

Dr. Joslin stressed the importance of laboratory work in the management of this disease and urged wholesale methods in order to lessen the cost to the people. This could be done by having one or two days a week in the laboratory when blood sugars and other tests would be done, and the cost per test would be materially reduced.

The speaker then mentioned several valuable new lines of research which indicated that the pituitary (acting through the adrenals to the pancreas) seemed to be a highly important cause of the disease and its mortality. Coma could not be produced in animals whose pituitary gland had been removed.

Dr. Joslin then presented in a very practical way the management of diabetic diets indicating that carbohydrate should be given from 100 to 200 grams per day, protein as in the normal individual, and fat as needed to maintain weight. Old people need very little protein. He demonstrated a very simple routine for the administration of insulin, based on whether the urine test showed red, yellow, green, or blue color—dosages of insulin varying from 20 units down to nothing, at intervals of three to six hours depending on the test. Coma patients should receive half-hour doses of insulin, the size of the dose varying with the duration of the disease. One diabetic coma case was relieved with 30 units, while another received 780 units before being relieved.

Dr. Channing Frothingham was then introduced by the President with the subject of "Physicians, Patients and Pay." He opened his remarks by saying that the two main jobs were to teach the doctor to give the best of medical care, and teach the layman to go to get it. Good medical care is expensive; poor medical care is more expensive. In 1910, the American Medical Association had a drive to clean up the lowest class medical schools in the country. At that time there were forty-five in the United States, and two of these were in Massachusetts. Now, there are five or six in the United States and three in Massachusetts.

Dr. Frothingham indicated the importance of choosing a family medical adviser to take care of all medical problems for every family. If specialists are necessary, the family medical adviser will decide it. The opinion of the specialist is to be censored by the family medical adviser because of his particular knowledge of the patient as well as his disease. He expressed a dislike of the office hour because of the need for hurry in examinations. He indicated his disapproval of a patient going directly to specialists, and he thought specialists ought to be rated by some authority other than themselves. He indicated the desirability in his opinion of a change in hospital management, so that each hospital would be a complete unit where mental conditions, tuberculosis, cancer, and all other diseases should be cared for in the same group. He expressed his disapproval of the principle of seniority as controlling hospital staff appointments or management.

Referring to the report of the Committee on the Costs of Medical Care, he showed that if the waste resulting from poor medical expenditure—that is, money spent on quacks and patent medicines—were eliminated, the same amount of money would give good medical care to all the people. He indicated that there was something wrong with the present system of providing free medical care so extensiveiy. He cited the Legal Aid Society which does not expect the lawyer to provide free legal service, but pays him for his services from funds contributed by private individuals. Dr. Frothingham expressed as his conviction that it was desirable that some method of budgeting or insurance must be worked out for the care of low income groups. There should be free choice of physician and control by the profession in the operation of such a plan, and a continuation of the fee system rather than a salary system. The salary system would eliminate the stimulus to better work which is inherent in fee system.

The meeting adjourned at 4:00 P.M.

E. S. Bagnall, *Secretary.*

PEABODY HOME FOR CRIPPLED CHILDREN

Annual Meeting

The Annual Meeting of this organization was held May 21, 1935, with the election of the following named officers:

Honorary president, Mrs. Edward B. Kellogg; president, Mrs. Gilbert C. Brown, Jr.; vice presidents, Mrs. Charles V. Minott and Mrs. Henry F. Leonard; secretary, Mrs. James B. Hill; treasurer, Mrs. E. B. Kellogg; trustees, Mrs. Melville M. Bigelow, Mrs. Gilbert C. Brown, Jr., Miss Helen Temple Cook, Mrs. Arthur A. Cushing, Mrs. Lewis A. Crossett, Mrs. Leroy Greene, Mrs. James B. Hill, Miss Rosamond Lamb, Mrs. Henry F. Leonard, Mrs. Charles V. Minott, Mrs. Martha Peabody Prowse and Mrs. Joseph W. Phinney.

The president made the following designated appointments:

Mrs. N. S. Smith as superintendent; Miss Florence Walkins, assistant treasurer, together with an advisory board consisting of Daniel B. Ruggles, attorney, Stephen Roberts and Dr. Frank R. Ober. Those appointed to the medical staff are Dr. Kenneth D. Blackfan, Dr. Elliott C. Cutler, Dr. Frank R. Ober, Dr. Harvey Cushing and Dr. Harris P. Mosher.

In addition to reports of the Superintendent and Committee, Dr. Frank R. Ober and Dr. Gerald Hoeffel submitted reports of the professional work.

HAMPDEN DISTRICT MEDICAL SOCIETY

Report of Special Meeting

A special meeting of the Hampden District Medical Society was held at the Springfield Academy of Medicine, May 20, 1935, at 8:15 P.M., to discuss the subject of Medical Economics in Relation to Proposed Compulsory Health or Sickness Insurance Legislation. About seventy members were present, Dr. Theodore S. Bacon, President, in the chair.

Dr. M. A. Tighe of Lowell, the first speaker, by invitation, discussed some of the compulsory sickness insurance schemes or laws already in effect in other countries, citing some recent surveys made under the auspices of the American Medical Association and various committees. He drew attention to the report or rumors that Germany, with a fifty-year experience of such a system, was likely to abandon it in the near future; that the British system, while in some respects the least objectionable, had been greatly modified since its institution and was still criticized as unsatisfactory; and that administration of such systems generally was expensive and uneconomical. He urged vigorous support of the American Medical Association in opposition to ill-advised and hasty legislation on these matters.

Dr. Charles E. Mongan of Somerville, present also by invitation, as a representative of a special committee of the State Society, stated that measures like those under discussion had been urged before and in several instances by the same sponsors. He mentioned one bill pending before the State Legislature which was thoroughly pernicious and which if passed would place something like 80 per cent of the average physician's practice in the hands of a politically appointed commission, under which the physicians serving would have the status of employees to be hired and removed at will, outside of the civil service. He urged that the medical profession of the State of Massachusetts make their own investigations, present their own plans and solutions of whatever problems they found to exist in the state, and that adequate financial appropriation be made to assist their work. He opposed trying to copy the systems of Great Britain or any European nation, whose population, circumstances and problems did not correspond with ours.

Dr. James R. Miller, of Hartford, Conn., another invited guest and speaker mentioned the similarities in population, origin, economic condition, and medical problems between Massachusetts and Connecticut, which states have the highest per capita wealth in the country. He quoted from a recent author to the effect that in practice it has always been difficult to realize both liberty and equality and that the balance had shifted back and forth since the beginning of American history of government. He stated that general sentiment in the medical profession in his state also favored investigation and development of any plan by the local medical organizations.

There was considerable discussion participated in also by a visitor from the Michigan State Medical Society, who had spent some months in Europe studying the sickness insurance schemes in effect there. Inquiry was made as to the official attitude of The *New England Journal of Medicine*, as an organ of the profession in this section.

A motion was made and unanimously passed as follows: "Resolved, That the Hampden District Medical Society heartily endorses the stand taken by the representatives of the State Medical Society and the American Medical Association regarding compulsory sickness insurance and pledges its enthusiastic support to the program of the Public Relations Committee to educate the public as to the disadvantages of such legislation."

Questionnaires sent out by the District Public Relations Committee were also collected.

THURSDAY AFTERNOON CLINIC AT THE PETER BENT BRIGHAM HOSPITAL

Dr. Henry A. Christian held the usual Thursday afternoon clinic on April 11. The first patient had entered the hospital with a chief complaint of shortness of breath. She had had paroxysmal attacks of dyspnea for several months and recurrent attacks of bronchial asthma. Doctor Christian showed this patient particularly because of her general pasty, pudgy appearance with a thinning of the eyebrows and dry skin with slight superficial scaling. In spite of a loss of appetite in the last six months, she has gained weight and has had hoarseness for about a year. The diagnosis of myxedema is frequently not made, particularly in the earlier stages. This patient's basal metabolic rate, although unsatisfactory because of her cough, was minus twenty-two; her blood cholesterol was three hundred and five milligrams per cent. Doctor Christian did not recall having seen bronchial asthma associated with myxedema before, but he expected that treatment of the myxedema would probably improve the other condition, because probably the mucous membranes of the bronchi are edematous from the myxedema, thus accentuating the asthma. Some patients show the typical picture of myxedema at a higher metabolic level than do others, and, although minus twenty usually is taken as the point below which myxedema exists, no such definite level can be strictly adhered to.

Doctor Christian then discussed a patient who had had a history of high blood pressure during a pregnancy seven years ago, since which time her blood pressure remained elevated, and she showed evidence of renal damage. This patient was demonstrated on the fourteenth of March, at which time she had a pericardial friction rub. This condition persisted until death, and at postmortem a marked layer of fibrinous exudate over the visceral and parietal layers of the pericardium was found. The kidney was atrophied and the cortex thinned. It was pale and coarsely granular. Grossly and microscopically it was of the glomerular type of nephritis, although a vascular lesion was demonstrated also.

A patient was discussed who was not shown because of her illness. This was a twenty-seven year old girl who on admission complained of severe weakness. She was apparently well until three months ago when she noticed herself getting pale and tiring easily. For the past ten weeks she has had constant tingling of her fingers. Physical examination was essentially negative except for the pallor and an edematous larynx. The red blood cell count was one million and the hemoglobin twenty-two per cent. The cell volume was above normal. The white blood cell count was two thousand, eight hundred and fifty with sixty-six per cent polymorphonuclear cells. She had total gastric anacidity even after the injection of histamine. The problem here is whether this patient has a primary pernicious anemia or perhaps a leukemic condition. Pernicious anemia is rare below the age of twenty, and in this age group aplastic anemias and leukemias make up the bulk of the anemias. However, the latter condition usually has some free hydrochloric acid in the stomach. This patient seemed weaker than the average primary anemic with the same blood count. She was given intramuscular liver extract and her reticulocytes rose from .05 of one per cent to 1.8 per cent twenty-four hours after this treatment. Doctor Christian mentioned the fact that such anemic patients may have such a fluctuating reticulocyte count spontaneously, and, therefore, this may not be a response to the treatment. He felt that some of the patient's fever of one hundred and three degrees might have been due to a reaction to the intramuscular liver. She responded later remarkably to the liver therapy and obviously was a case of pernicious anemia.

Another patient was spoken of who had a red count of three million and a hemoglobin of twenty-five per cent. This was a seventy-five year old woman who had had abdominal pain for one and a half years before entry. This was generalized with occasional radiation to the lumbar region bilaterally. It was usually preceded by nausea and occasionally by vomiting and necessitated a hypodermic for relief. On physical examination she was pale with a slight yellow tint and some examiners thought they felt a mass in the right lower quadrant. A barium enema showed a constant filling defect in the cecum. She was operated upon on the eighth of April, after having been built up with transfusions, and a carcinoma of the cecum was removed together with some involved local lymph nodes. A nodule in the liver was found to be a small echinococcus cyst. Doctor Christian emphasized three points in regard to this patient: first, any unexplained anemia in the older age group which does not respond to liver therapy should cause the doctor to suspect a neoplasm in the mid stomach or the large intestine, particularly the cecum, because in these two places obstruction will not occur until late; secondly, such people should be explored even though the mass has been palpable for some time, because it may be excisable and often curable; thirdly, even if the regional lymph nodes are involved, often they can be removed and a cure effected.

A man was presented with a red count of one and a half million and a hemoglobin of twenty per cent. He had had a cold in January 1935, and several attacks of breathlessness since then with severe dyspnea on exertion. Physical examination disclosed a very pale man. His epigastric region was distended and tympanic, and a mass was suggested in the right upper quadrant between the mid line and the right nipple line. Doctor Christian pointed out that this was just the type of patient in which the physician must hunt for a gastrointestinal neoplasm, particularly in the cecal or mid-gastric regions, because in these locations there are often no symptoms of carcinoma. The cecal type very often may be removed with resultant cure, while the gastric type is not amenable to treatment except very rarely. This patient's stools consistently had a positive guaiac test, but the barium enema was negative. Subsequent x-ray study revealed evidence of a carcinoma in the midzone of the stomach, apparently inoperable.

GREATER BOSTON MEDICAL SOCIETY

A meeting of the Greater Boston Medical Society was held at the Beth Israel Hospital on the evening of April 30. Dr. Herrman Blumgart presided. Dr. Frankwood E. Williams spoke on "The Relation of the Physician to the Problem of Economic Security," in which he discussed certain general principles. He said that many changes are and will be taking place in all parts of society, and that our problem is a widespread one which includes all parts of the United States and indeed the world. Medical men are not finding it possible to make an adequate living and many patients are not getting adequate medical attention. The first reaction has been to protect oneself and can be likened to the weavers' attitude when looms were first invented where they reacted by smashing the machines.

A recent survey in California led, a few weeks ago, to the California Medical Association coming out in favor of compulsory health insurance. The survey pointed out that one-third of the physicians of California have an annual income of less than $2,000, and more than half have an income of less than $3,000. Seventy-five per cent have less than

$5,000. On the other hand more than half of the families of California have an income of less than $1,200, and the medical attention needed in these families is approximately twice that needed in the group with incomes of $5,000 or more (three per cent of the families). The question which arose in California was not if they should have health insurance, but what form of insurance it should be. The situation is much the same over the rest of the country. Some are in favor of the status quo, others advocate complete socialization, others voluntary insurance, others hospital insurance, etc. California is also using the so-called outletting plan where price levels are not reduced in the regular market, but other markets are sought where medical services are dispensed at whatever price they will bring. In other words the doctor lets the poorer class have his services for less than the richer class. This plan is being carried out with the help of social workers who investigate the families and acquaint the doctor with the conditions.

All of the above methods have the common aim of developing a technic to provide money with which to pay for medical care. Doctor Williams asked the question, "Are we not playing with a small enemy?" The man with little money really has only a little to pay with; his employer will not pay him more. The ordinary medical plan reduces the wages of men whose wages are already too low, for an adequate standard of living. According to the ideals upon which our democracy was founded every man is entitled to adequate medical care, among other things, if he is willing to work. The average man, like the doctor, is willing and able to work, but he is not free to do so. The physician is in the same position as the laborer, although perhaps on a slightly higher level, and the same social forces that block the laborers also block the physicians. Both are at the mercy of the humanitarian feeling of the few people that hold the economic power, and who make profit and not honest work the foundation stone of our civilization. Doctor Williams suggests that we keep this attitude in mind when we formulate plans, for he believes that we should present a united front with the workers. Production should be for use and not for profit.

While the medical profession must work out the details of any plan that pertains to its profession, it must also insist on having a voice in any large social change that may take place, because it is profoundly involved. In other words medical problems cannot be solved simply medically. An attempt to solve the larger problems will in large part solve our own. Not until we are economically free can we be professionally free.

Doctor Williams closed the meeting by saying that he was in favor of the eventual socialization of medicine, although not at this time, as it would play into the hands of those who would prevent our having any say in anything. When production is socialized, then it is all right for medicine also to be socialized.

MASSACHUSETTS GENERAL HOSPITAL CLINICAL MEETING

The Massachusetts General Hospital held a Clinical Meeting on March 28. Dr. Arthur W. Allen presided. Doctor Schwab presented the first case. A twenty-three year old girl had been run over by a wagon eighteen years ago. This accident was followed by two days of semi-consciousness and a left decompression was done. Eight years ago she began having attacks of convulsions with nausea, vomiting, and headache. Three years ago she had several of these attacks in one week. Two years ago they were coming every day. By x-ray there was an enlargement and displacement of the left ventricle, and at operation an arachnoiditis with a collection of fluid was found over the motor area. The adhesions were cut and drainage provided through the dura. Since operation she has had only a few seizures.

Doctor Abbott presented a case of a twenty year old girl who started to have seizures in 1933 with loss of consciousness, but without injury to herself. In the hospital she went into status epilepticus with the convulsions chiefly on one side. A diagnosis of hysteria was made, and it was found that her father had attacked her mother, in the presence of the child when she was eight years old. It was believed that this was the precipitating factor.

Doctor Mixter presented a man with Jacksonian epileptic attacks in one arm. On exploration it was found that electrical stimulation over the premotor cortex caused a definite blanching of this area, and a generalized convulsion. This gyrus was excised and there have been no seizures since.

Dr. James B. Ayer spoke on "The Selective Follow-Up System of the Massachusetts General Hospital". On the advice of a special committee appointed to study the situation, the Massachusetts General Hospital has adopted a system where selected patients are followed. They are referred to the correct clinic on the right day with a definite appointment, and the system is as nearly automatic as possible. A blank is filled out on discharge. One part is given to the patient telling him exactly when and where to go. Another part of the slip is held in the record room until the day of the patient's appointment, and then goes to the proper clinic with the record. The other part of the blank is pasted on the house record. If the patient fails to return and the physician is desirous of seeing him, the secretary sends a letter. In the nerve clinic in a period of six months studied, sixty-four per cent reported on the card alone, and a letter caused twelve per cent more to report. Age incidence made no difference, and the interval to the time of appointment apparently was insignificant. The definite date is felt to be important.

Doctor Codman briefly discussed this paper, and wondered if it would not be advisable for the trustees to pay for a department of follow-up with a statistician and a few clerks. This would also facilitate the ease with which any member of the staff could se-

cure records for any statistical study he might wish to make.

Doctor Cobb spoke on "The Causes of Convulsions," and stressed certain points. We must not think of epilepsy as hopeless. There are over sixty causes which Doctor Cobb presented on a chart. Only eight per cent have an inherited element. The causes can be grouped under the headings of real physical mechanism which are chiefly; first, altered conduction; secondly, increased irritability; thirdly, oxygen lack; fourthly, change in hydrogen ion concentration.

As to the excitant area of convulsions, Doctor Cobb said that vasovagal "spells" which are related to the respiratory and heart rate arise in the hind brain. Autonomic "spells" arise in the hypothalamic region. There are several special areas each of which has its own form or pattern. The aura is a warning before the actual fit. If the aura arises in the occipital region with the observation of lights, etc., loss of consciousness comes late, and convulsions occur simultaneously all over the body. In the auditory aura there is vertigo followed by unconsciousness and a widespread convulsion. If the stimulus arises in the precentral area, loss of consciousness comes late. It is important to observe and record accurately the convulsion in these patients in order to attempt to establish the focus of origin. A moving picture of a man having a convulsion was shown.

Dr. W. Jason Mixter spoke on "The Surgical Treatment of Epilepsy." One method of attack from a surgical point of view is to cause a diminution in the impulses passing over the sympathetics to the vessels of the brain. This is accomplished by a resection of the cervical dorsal ganglia bilaterally. There is practically no mortality and fourteen per cent are totally relieved, with about eighteen per cent more improved. Direct stimulation of the brain at the time of operation is used in attempting to locate the focal point in order that this may be excised, but this has given unsatisfactory results. Superficial cysts on or within the brain substance, as well as scars, may be excised. No attempt is made to close the cavity which is left in the brain, and the coagulating current is used as little as possible. When a trigger point is found on electrical stimulation, it shows a definite blanching just before the convulsion and is due to a narrowing of the finer arteries. Brain tumor is the commonest cause of convulsion after the age of forty. Doctor Mixter's personal criteria for operation in epilepsy are first, the attacks must be frequent and severe enough to incapacitate the patient; secondly, there must be some localizing sign indicating at least which side the lesion is on; and thirdly, other methods of treatment should be tried in an attempt to account for the convulsions in some other manner. Doctor Mixter follows his patients very carefully and tries to protect them from other precipitating factors in so far as is possible.

In the discussion which followed, Doctor Cobb said that repeated convulsions over a long period of time give a permanent damage to the brain with definite loss of nerve cells, but it is possible to have epilepsy continue for many years without very marked mental deterioration.

THE NEW ENGLAND HEART ASSOCIATION

Dr. W. D. Reid presided at the monthly meeting of the New England Heart Association held in the Evans Memorial building at the Massachusetts Memorial Hospitals on March 25. Doctor Reid presented the first paper on "Some Observations upon Palpitation," in which he stressed the importance of emotions in causing palpitation, a relation which has been shown physiologically. The general physician needs in particular to be reminded of this fact.

Dr. M. A. Lesser spoke on "Primary Bilateral Pulmonary Thrombosis" and reported the case of a seventy-three year old carpenter who before entry had been treated outside of the hospital two weeks for pneumonia, and who for six weeks before entry had had soreness between the scapulae. Two weeks before entry he had a sudden sharp excruciating pain over the right scapula which later shifted to beneath the left scapula, and was accompanied by the spitting of blood. On the fourth day after entry he had a sudden attack of pain, screamed, and died. Physical examination had shown distant heart sounds, but no murmurs or accentuated pulmonary second sounds. There had been a few small areas of dullness in the subscapular area and a blood pressure of one hundred and seventy-three over seventy. Coronary thrombosis had been the first consideration, and T_2 and T_3 were inverted.

Doctor Branch discussed the pathological findings in this case, and said that there were multiple pulmonary infarcts and a primary pulmonary thrombosis. Thromboses may be caused by damage to the vessel wall, damage to the blood, alterations in the rate of blood flow, or a change in the direction of flow. Many old healed infarcts were found. Doctor Branch indicated that this condition may be more frequent than is commonly believed. This man had marked arteriosclerosis of the pulmonary artery which tended to slow down the blood flow. By a careful investigation of the small vessels of the lungs he found many thrombi straddling the bifurcation of small arteries which had gradually built themselves up to a point where they could occlude the vessel. Many thrombi were completely organized and recanalized, the new vessels having an endothelial lining. There have been only twenty-four cases of this condition reported in the literature. The causes of pulmonary thromboses were reviewed. They are the following: primary sclerosis of the pulmonary artery with long-standing chronic passive congestion; a luetic lesion especially of Ayerza's type; or embolic phenomena, forming a foundation for thromboses.

In Ayerza's disease there is chronic cyanosis, dyspnea, a slight ventricular hypertrophy, chronic cough, secondary polycythemia with hypertrophy of

the bone marrow, and a sclerosis of the pulmonary artery. The Wassermann is frequently positive.

Dr. F. H. Pratt discussed "A Transitional Region between Skeletal and Cardiac Muscle." He has been studying the heart from the point of view of the comparative physiology of the muscle. In cardiac muscle the fibres are syncytially joined, so that a stimulus at any point is, in the vertebrates, carried throughout the structure. In certain invertebrates, however, and in the lymph hearts of amphibia the beat is aroused by nerve cells governing the different parts of the syncytium just as they govern the units of skeletal muscle. A lymph heart transplanted by Miss Marion Reid's method, thereby deprived of all nerve influence, is found to assume eventually the main characters of ventricular muscle, showing a transition from the neurogenic to the myogenic type of rhythm even in the form of the action current.

Dr. W. D. Reid presented "An Oscillograph for Electrocardiography." He demonstrated his machine and showed slides taken with it. By this method waves of a frequency of six to eight hundred per second can be photographed, and details of cardiac waves not recorded by the string galvanometer can be studied. It is possible so to spread out the wave that one beat covers one yard of paper. The clinical value of the machine has not yet been fully demonstrated.

Dr. G. Levene spoke on "Roentgenographic Study of the Heart. A Moving Picture of the Heart." The pictures were made from a model mechanical heart called a phantoscope, demonstrating the diagnosis from the fluoroscopic examination of the human heart. Fluoroscopic pictures of the heart with extrasystoles, sinus arrhythmias, auricular fibrillation, heart block both complete and partial, and thyrotoxicosis were shown. Other conditions were likewise demonstrated. Doctor Levene said that x-ray diagnoses of heart conditions are just about as accurate as clinical diagnoses. Accurate measurements are very important in this connection. In the diagnosis of coronary thrombosis by x-ray there is either a straight or convex left border of the heart, and when viewed under the fluoroscope the amplitude of the excursion of this border is definitely diminished.

THE RÔLE OF PERIPHERAL CIRCULATORY FAILURE IN CLINICAL MEDICINE

Dr. Dana W. Atchley of the Presbyterian Hospital, New York, delivered a lecture on "The Rôle of Peripheral Circulatory Failure in Clinical Medicine" April 26 under the auspices of the New England Heart Association. Doctor Atchley stressed a few simple principles which cause peripheral circulatory failure, a condition that is the physiological result between the disparity in the circulating blood volume and the necessities of the body. He reviewed briefly the clinical picture of shock with a decreased cardiac output due to decreased venous return which in turn is caused by dilatation of the capillaries from anoxemia with the passage of plasma into the tissues. Nitrogenous waste products accumulate and tend to further damage the capillary walls.

The common mechanisms causing peripheral shock are as follows: first, direct blood loss or loss of water and electrolytes; secondly, loss of serum from the capillaries; thirdly, toxins causing capillary dilatation; and fourthly, capillary dilatation due to nervous stimulation. Doctor Atchley briefly discussed the history of the treatment of this common clinical condition and pointed out that over one hundred years ago these fundamental points were discussed by Shaughnessy, and applied by him to the treatment of cholera, but it was not until 1909 that the treatment of cholera by intravenous injection of saline became generally advocated. Diabetic coma had been treated in this way some seventy-five years ago, but the alkaline treatment overshadowed the more rational form of therapy until recently in diabetes. The loss of salts and water is partly due to the loss associated with severe glycosuria and partly due to the base lost by excretion. Shock is the chief cause of death in diabetic acidosis. In simple intestinal obstruction and in fistulous openings of the upper intestinal tract, electrolytes and water are lost, and if not returned, will lead to peripheral circulatory collapse. In burns the exudation of serum may lead to shock and it has been shown that seventy per cent of the total blood volume may be lost from one-sixth of the total body surface area in this manner in twenty-four hours.

In Addison's disease there is an increased permeability of the kidney to sodium with a resulting high loss of sodium chloride and water, thus resulting in a picture similar to other types of peripheral collapse.

In heat prostration there is likewise salt depletion and dehydration through loss of fluid through the pores. Bile peritonitis causes a loss of fluid into the peritoneal cavity, and may produce collapse.

Histamine in large doses will cause a rapid dilatation of the vascular bed which leads to a typical peripheral collapse. Doctor Atchley spoke of a case of snake-bite observed by him where it was necessary to inject seventy-two hundred cubic centimeters of saline intravenously over a course of sixteen hours in order to combat the circulatory collapse produced by the snake venom. This principle is not usually carried out in the treatment of snake and spider bites. In severe infectious diseases collapse may occur due to dilatation of the vascular bed with capillary damage. Fear and cold may cause such peripheral failure, as well as extensive cardiac infarcts.

Much of the postoperative surgical shock is due to peripheral circulatory failure and not cardiac failure so that salt solution is more often indicated than digitalis. As has been pointed out by Fishberg, the observation of the venous pressure is of great importance as it is always increased in cardiac failure, and, with rare exceptions, is always down in peripheral failure. Very rarely venous

pressure may be up because of venous constriction.

The longer shock exists the harder it is to treat, and the higher the mortality. As an emergency measure fifty per cent glucose may be given to draw fluid into the blood from the tissues but, following this, saline solution should be used in large amounts. Amazingly large amounts of fluid may be given without affecting the venous pressure, but after the venous pressure starts to rise it is possible to damage the heart if the fluid is given too fast. The normal heart can take fifteen hundred cubic centimeters immediately without any rise in venous pressure, although if the heart is damaged it will rise before this. Overloading the heart in cases of shock is a very rare occurrence. In certain cases the salt depletion is faster than the water loss, and, therefore, when this is true it is advisable to give from 1.2 to 1.5 per cent saline. In advanced shock large transfusions are indicated because of the contained protein which helps to retain the fluid within the circulation.

Gum acacia in the past has given severe reactions, but may now be procured in purer form and is perhaps of use in some cases. Doctor Atchley said that salt solution should always be given intravenously especially because of the decreased ability to absorb subcutaneous solutions in these cases. Vasoconstrictor medicines are contraindicated and adrenalin has been found to cause a decrease in circulating volume after a temporary increase.

In answer to several questions Doctor Atchley said that shock in early coronary thrombosis is an excellent protective mechanism and for this reason does not call for treatment. He has seen one case of pneumonia respond well to fifty per cent glucose. He has seen no obvious benefit from oxygen therapy in shock. The rapidity of loss of sodium chloride in the diabetic may be tremendous when insulin is stopped, and marked retention is observed after insulin treatment is resumed.

SOUTH END MEDICAL CLUB

The next regular meeting of the South End Medical Club will be held at the office of the Boston Tuberculosis Association, 554 Columbus Avenue, Boston, on Tuesday, June 18, at 12 noon. The speaker will be Donald Munro, M.D., F.A.C.S., Assistant Professor of Neurological Surgery at the Harvard Medical School and Visiting Surgeon in charge of Neurological Surgery at the Boston City Hospital. The title of his talk will be: "The Responsibility of the General Practitioner in the Case of Injuries to the Skull and Brain." All physicians are cordially invited to attend this meeting. Luncheon will be served at 1 o'clock.

SOCIETY MEETINGS, CONGRESSES AND CONFERENCES

CALENDAR OF BOSTON DISTRICT FOR THE WEEK BEGINNING MONDAY, JUNE 10, 1935

Tuesday, June 11—

†2:30-4 P.M. Ward Visit, Massachusetts Eye and Ear Infirmary.

Thursday, June 13—

*12 M. Clinico-Pathological Conference. Massachusetts General Hospital.

†12 M. Clinico-Pathological Conference. Children's Hospital.

Saturday, June 15—

*10-12. Staff rounds at the Peter Bent Brigham Hospital. Open to practicing physicians.

*Open to the medical profession.
†Open to Fellows of the Massachusetts Medical Society.

June 10—American-Canadian Medical Golfers Play at Atlantic City. For details write Bill Burns, Executive Secretary, 4421 Woodward Avenue, Detroit.

June 10 and 11—American Radium Society. See page 1066, issue of May 30.

June 10 and 11—American Proctologic Society will meet at the Marlborough-Blenheim, Atlantic City. For information address Frank G. Runyeon, 1361 Perkiomen Avenue, Reading, Pa.

June 10 and 11—The Certified Milk Producers Association of America will meet in Atlantic City, N. J. Information may be obtained on application to Dr. Harris Monk, 360 Park Place, Brooklyn, New York.

June 11—American Heart Association. The Eleventh Scientific Session will be held from 9:30 A.M. to 5:30 P.M., at the Hotel Claridge, Atlantic City, N. J. The program will be devoted to various subjects on cardiovascular disease. Gertrude P. Wood, Office Secretary, 50 West 50th Street, New York, N. Y.

June 11—American Neisserian Society will meet at the Hotel Claridge, Atlantic City, New Jersey.

June 12 and 13—Academy of Physical Medicine, Annual Meeting. See page 1066, issue of May 30.

June 17-19—The Medical Library Association will meet in Rochester, New York. For information address Miss Frances N. A. Whitman, Librarian, Harvard University Schools of Medicine and Public Health, Boston, Mass.

June 17 to 21—Convention of the Catholic Hospital Association will be held at Creighton University, Omaha, Nebraska. For information address the Most Reverend Joseph Francis Rummel, D.D., Bishop of Omaha.

June 18—South End Medical Club. See notice elsewhere on this page.

June 18—Lawrence Cancer Clinic. See page 1101.

June 24-28—American Urological Association and Western Branch Society, American Urological Association, will meet at the Palace Hotel, San Francisco, California. For details write Dr. Charles P. Mathé, 450 Sutter Street, San Francisco, California.

June 27-29 inc.—British National Association for the Prevention of Tuberculosis will be held at Southport, England. Persons desiring further information should write to Miss F. Stickland, Secretary of the Association at Tavistock House North, Tavistock Square, London, W. C. I., England.

July 1-23—University of Freiburg i. Br. will hold a vacation course of the medical faculty. For information address Akademische Auslandsstelle der Universität Freiburg i. Br., Schwimmbadstrasse 8, Germany.

July 22-27—Seventh International Congress on Industrial Accidents and Diseases, Brussels, Belgium. The American Committee of the Congress is under the chairmanship of Dr. Fred H. Albee, New York, for the Section on Accidents, and that of Dr. Emery R. Hayhurst, Columbus, Ohio, for Industrial Diseases. The American delegation to the Congress will sail from New York on July 8 and visit London, Amsterdam, The Hague and Paris, and, optionally, Budapest. Physicians interested in the Congress or in the medical tour in conjunction with it, may address the Secretary, Dr. Richard Kovacs, 1100 Park Avenue, New York City.

October 7-10—American Public Health Association will meet in Milwaukee, Wisconsin. For information address the American Public Health Association, 50 West 50th Street, New York City.

October 21-November 2—1935 Graduate Fortnight of the New York Academy of Medicine. See page 898, issue of May 9.

October 28 - November 1—The Twenty-Fifth Clinical Congress of the American College of Surgeons. See page 1065, issue of May 30.